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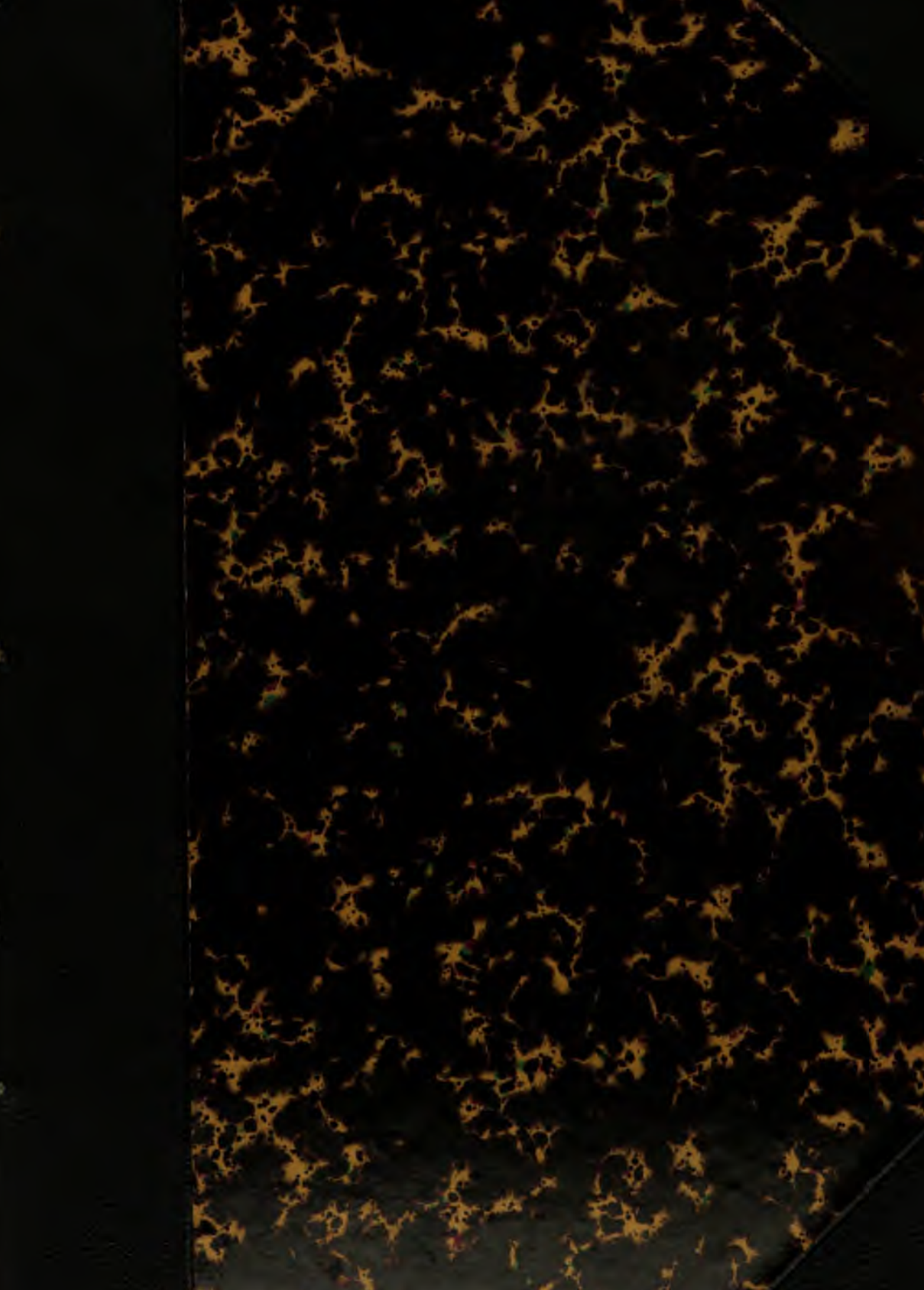
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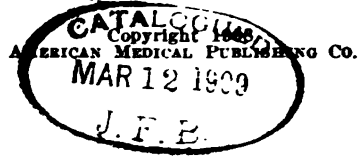
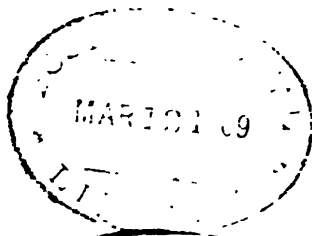
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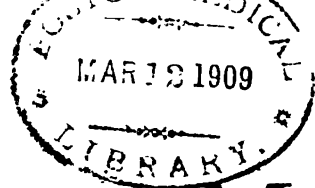


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10984 American Medicine

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A New Regime.—With this issue *American Medicine* enters upon a new era. A short time ago, a few medical men believing that the trend of affairs necessitated active promotion of a broader spirit of optimism in medical journalism, sought to acquire the one medical publication in America that most appealed to their ideals and aspirations. That publication was *American Medicine*, a journal that ever since its inception has stood fearlessly and forcefully for the best ideals of the medical profession. Efforts to acquire the valuable property that had been developed by the earnest, capable labors of Dr. George M. Gould and his associates finally culminated and this issue marks the change of control.

American Medicine will continue as a monthly. Its honorable character and recognized qualities will be perpetuated, and the new staff while maintaining its high standard will earnestly strive to still further increase its field of usefulness.

Our Policies.—In inaugurating a new regime of government or of business it is always customary to outline the policies that are to be followed. In pursuance of this custom, the staff of *American Medicine* wish to announce that their principal object will be to faithfully and honestly reflect the best that exists in modern medicine and surgery,—particularly as exemplified

by American practice. No country or nation can show a medical profession more progressive as a whole, or made up of more capable individuals, than the United States of America.

The pathway of this country's medical history is marked by monuments of discovery and achievement that will endure as long as mankind has ills from which relief is sought. To-day the scientific world no longer believes that Europe is the exclusive birth-place of all scientific progress, but now looks upon America as an equally fruitful field for future medical development.

It is to be regretted that evils and abuses have not been unknown in American practice. To have expected differently, however, would have been ridiculous. To err is a humanism from which American physicians have been no freer than their foreign colleagues or the rest of their fellow men. Mistakes and failures have been inevitable. But as it is upon mistakes and the intelligent interpretation of failures that success is always built, the medical institutions of America, proving no exception to the rule, have each year pressed forward a little closer to the ultimate goal of useful, honest success.

So it is with a real reverence for the past, a live interest in the present and a strong, abiding faith in the future of the American physician that the present staff takes up its duties.

A constant effort will be made to foster just pride in what American medical men are doing, and to stimulate in every way everything tending to uplift and strengthen the practice of medicine. Realizing that practicality, after all, always has been and always will be the greatest need of the healing art, the practical phases of medicine will be given the utmost attention. This does not mean that there will be the slightest tendency to ignore the theoretical side of medicine, nor to minimize the great importance of research and experimental investigation. But it does mean that all things pertaining to medical science will be considered from the standpoint of practical utility, and measured critically by standards of clinical usefulness. In other words, *American Medicine* and the men who are charged with its future conduct, will constantly aim to serve the interests of the individual physician—to help him to make himself a better practitioner of medicine and of the greatest possible value as a humanitarian factor in the social organism.

Finally, let it be said that unswerving adherence to honest principles, absolute loyalty to professional interests, and an earnest effort to promote practical scientific progress—these constitute the platform of *American Medicine*.

Advertising in American Medicine.—*American Medicine* believes that the advertising department of every scientific publication is entitled to a "square deal." It is an unfortunate fashion now-a-days to consider all advertising venal and shun it accordingly. This is as great an error as it is to accept every thing one reads without the exercise of due judgment. Without a single exception every medi-

cal journal of worth and standing to-day has achieved its present position by the substantial aid of its advertising department. Many of the advertisers now so freely condemned were once eagerly sought, and the money they paid was very acceptable for the legitimate opportunities it afforded. It is safe to say that the medical profession has thus received much benefit from the growth of medical journalism and it ill behooves medical men to condemn medical advertising in toto simply because progress and common sense have demonstrated a considerable number of fallacies and some evils.

The advertising pages of every medical journal are a desirable feature, not as some believe solely as a source of revenue and to enable publications to keep their subscription prices down to a nominal figure, but because of the valuable information they should and do offer to those who read them with discriminating intelligence. This the great majority of American physicians are able to do and their judgment and common sense will not lead them far astray as to what they can or cannot use with advantage in their practice. The dangers that have threatened, therefore, have been transitory, unless we very greatly over-estimate the acumen and good sense of the average medical man. The history of every thing that has been advertised to medical men during the past fifty years, shows conclusively that the only things that have stood the test of time have had well defined merit. That many of the things advertised have passed into oblivion, shows that the medical profession is well able to take care of itself in this respect.

A Standard of Advertising.—Every medical journal, however, owes it to itself to exercise a rational censorship of its advertising pages, and *American Medicine* has established certain rules to which all advertisements must conform. These rules which will meet with the approval of all honest advertisers as well as liberal minded physicians are as follows:

1. No advertisement will be accepted of any pharmaceutical product the manufacturers or proprietors of which do not unequivocally and accurately give the exact character and amounts of all active or potent ingredients.

2. No advertisement will be accepted of any product containing dangerous or toxic ingredients that is advertised to the laity.

3. No advertisement will be accepted that presents extravagant, ill founded or false statements.

Without exception the reputable manufacturers of the country are in accord with these rules, and that they stand ready to work with the medical profession for mutual advancement is our honest belief.

The great salient fact in the whole situation is this, that the individual physician is the sole arbiter as to the value or worthlessness of a remedy for his own use. If it is worthless in his hands—it is folly to use it. But if it does what he asks, and does it better than anything else he can use—it is not only folly if he does *not* utilize it, but he is false to himself and to his patient.

The Attitude of American Medicine to the American Medical Association.—We have been asked as to the attitude of *American Medicine* to the American Medical Association. Since every medical man connected with the editorial staff is a member of the Association, intensely interested in its work and proud of his affiliation, it goes without saying that

the attitude of *American Medicine* will be one of unprejudiced loyalty to the best and truest interests of the American Medical Association.

The good, of which there is much, we shall praise and aid in every possible way. But in the same spirit, whatever seems bad, unwise or dangerous, will be honestly criticised, believing as we do that in no other way can we better prove our loyal interest. Captious or malicious criticism will have no place in these pages for it is contrary to the spirit that should characterize a learned profession. But it is no worse, nor more harmful than blind, unthinking adherence to any fixed policy or to any group of men,—and we have no intention of making either mistake.

The members of the staff of *American Medicine* are each a part of the Association and their interests are identical with all other members. The success of the Association is the success of every individual member, and its mistakes are the mistakes its members allow it to make. The sooner every doctor who belongs to the Association awakens to this fact the more useful and helpful he will become to a great splendid organization of American medical men.

That "colds" are due to "catching heat" is another one of the curious paradoxes due to the modern investigations of disease, and by "colds" is meant all the acute inflammations of the respiratory tract including pneumonia. Eskimos never have pneumonia at home, but they nearly all die of it when they come to New York. This disease is now the most fatal one in the heat of Panama. Peary states that none of his party suffered from coughs or colds in the Arctic, but after their return they have all had

such diseases. "Tropical colds" are the persistent forms of bronchitis found in white men in the tropics and so hard to "throw off" or cure. It is well to inquire, now that the benefits of cold air are being recognized, whether our winter colds are not really due to the unwholesome heat of our houses, which are hotter in winter than in summer. If so, we do not "catch cold" when we leave the house, but "catch heat" when we enter it. Every new fact seems to point to the necessity of a reform in our methods of overheating our houses.

The acquittal of Mrs. Bradley has given one more proof that the American people as represented in juries, consider certain homicides justifiable. Insanity apparently did not enter into the case at all, though there were the usual deplorable differences of opinion among the alienists called as expert witnesses. Emotional insanity was rightly ruled out, as it does not exist as a disease in Washington. It was clearly stated that every one must master his passions or accept punishment so it was not considered a crime of passion. Sympathy no doubt ruled the jurors, yet their verdict was a clear-cut decision that the woman did no wrong when she murdered a man against whom she had a grievance. As long as this opinion exists it is idle to expect the people's representatives to pass a law deterring others from doing what is not considered wrong. The crimes must continue until we tire of them or until all people become alarmed for their own safety.

The Taint of the Hired Witness.—It is an agreeable sign of the times, that there was a complaint that the experts were really assistants to the attorneys and should have

been excluded from the witness chair. This charge evidently destroyed the value of the expert opinions—if the jurors were inclined to give them any value at all. Perhaps it is the first step in the reform of medico-legal practices. The employment of expert witnesses untainted by either side seems to be the next step. Alienists in particular, should desire the change, for no matter how honest the opinion, the jurors think it is tainted by unconscious partisanship—and this is an injustice to the great body of them.

The abolition of capital punishment has been discussed from time immemorial and will still be under discussion when the millenium comes. Death is found necessary at times when the offender is an intolerable nuisance, and it has been inflicted for about every thing from stealing a biscuit to murder. It has never been expected to end a specified crime and yet the foolish statement is constantly made, that as it has failed to prevent all crimes it has failed to prevent any. It does have a tremendously deterrent effect. Stranded arctic explorers in self-defense have been compelled to execute a man for stealing a mouthful of the little store of food, but his death did not prevent another giving way to his hunger, though it did deter most of the band, and saved the lives of the majority. This is the psychologic principal at the basis of capital punishment the world over in all times and for every offense for which it has been inflicted.

If lighter penalties suffice, they replace death as a matter of course, and the tendency of civilization has always been in that direction. Christ himself is recorded as stopping the stoning of the woman taken

in adultery, but for ages in those rude times nothing but death was sufficient to deter. It does seem nevertheless that we are advancing too rapidly in excusing murder. In some of our states and in Russia there is no capital punishment for common murders, which are alarmingly frequent. In England, the death penalty is rigidly enforced, and she has fewer murders than in some of our counties. These facts must be kept in mind by those who wish to end all death sentences. It's a scientific medical question after all—the psychic effect of the fear of death for an act harmful to the community. But we are actually excusing murders. What will the harvest be?

Opposite opinions as to the method of tubercular infection are proof that it is a subject which demands investigation for the discovery of the real truth. Theobald Smith says (*Bost. Med. and Surg. Jour.* Sept. 26, 1907): "The digestive tract is not the exclusive or even predominating portal of entry for pulmonary phthisis. It is highly probable that most cases are due to inhalation or aspiration." J. Vernon White *N. Y. Med. Journal* Nov. 2, 1907) says that "the investigations of a number of recent authorities seem to show that tuberculous infection through the alimentary canal is of very frequent occurrence," and that "tuberculosis due to the bacillus that enters the lungs with breathed air is an uncommon affection." As both of these opinions are based upon the same facts known to all pathologists it is quite evident that there are unknown factors which prevent agreement in the interpretation of what is already known. It is a matter demanding early settlement, or we may find opposition to the crusade against tuberculous

foods on the one hand or possible contact infection on the other.

The status of bovine tuberculosis seems to be about where it was left after Koch startled the world by his doubts as to whether bovine infection was ever transferred to man. Theobald Smith still says that there are some undoubted cases of bovine tuberculosis in children, among whom ingestion does play a more important part than in adults, but that there is at present no evidence that bovine bacilli may be transformed and assume the human type in the human body. The warfare against tuberculous cows is therefore to be continued, particularly against those with udder tuberculosis, and even against those with clinical symptoms without udder disease, some of whom at times discharge small numbers of bacilli into the milk. The factor of bovine tuberculosis he says is not of such importance as to divert attention from the real danger of contracting it from human consumptives. On the other hand White implies that foods are the common source of human infection and that the main efforts of prevention should be directed against tuberculous cows. Perhaps both sides are right and both methods of prevention should receive equal attention. At least it is the part of wisdom to do so until one side is proved to be wrong or both right.

The typhoid menace to travelers has long been known and at one time it was called the travelers' disease, for people generally got the infection on little journeys from home. It is said that in one week, 29 Philadelphians came home from their summer outings with typhoid, and a frequent

news items in the daily papers is a notice of some returning victim. It has been proved that we can acquire a certain immunity to constantly repeated home infections which are fatal to the stranger within our gates. Farmers' families are known to escape typhoid from unsanitary conditions, but the summer boarders get sick and die. The increasing density of populations and pollution of waters, render travel more and more fatal, unless we know enough to avoid dangerous foods and drinks.

The duty of transportation companies to guard passengers is brought up by the report of a serious typhoid outbreak on a steamboat on the Great Lakes. This is astounding in view of the widespread knowledge of this infection. In the last case, there is a promise of legal suits for heavy damages, and we trust the victims will make it expensive business for the guilty companies. Public safety demands more radical steps in the way of the imprisonment of the responsible officials. It is to be hoped that it will soon be possible to trace the source of infection in every case whether water or food, and that the guilty people be imprisoned, whether they be railroad presidents or owners of restaurants and hotels. The campaign of sanitary education has now developed into a demand for deterrent punishment, for the risk to our lives is now too great.

Nicholas Senn is Dead!—Wherever medicine and surgery are known and practiced there will come a hush—and then sadness—as this dire news is flashed over the

civilized world. A Master Surgeon is no more. His work is done, and the Last Chapter of a great noble life is finally written. Regret, deep regret, is inevitable, but mingling with the great sorrow that all must feel, there is bound to be a sense of real gratitude that such a man, so richly endowed with nature's gifts, could have been a part of our age, and of our country's scientific growth.

Senn's life was a symphony of achievement. To him surgery was a trust to be faithfully executed, and his devotion to his chosen vocation was an inspiration to his fellow-men. No detail of surgical science was so small and unimportant that he would neglect it, nor any problem so great and baffling that he was not willing to do his best to aid its solution. When smaller men would have been satisfied and content, his tireless energy carried him on! When weaker men would have been discouraged and defeated, his strength and splendid will converted apparent failure into substantial success! He shirked no duties, asked no considerations, claimed no rest. Work, conscientious work, dominated his career, and mankind long ago began to reap the harvest of his toil.

True, Senn is dead, and a strong man has paid the last debt, "passing through nature to eternity." But he will live for centuries yet, in his imperishable contributions to the study of surgery.

Therefore, let no carping critic say that medical science is decadent, for Senn's work with all of its bearing on the future of the healing art has for years been reflected in the honest ambitions and earnest efforts of countless other American doctors.

PAF.
E.H.B.



NICHOLAS SENN, M. D.

ORIGINAL ARTICLES.

ACUTE PANCREATITIS; WITH REPORT OF A CASE.

BY

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So much time and attention during the past few years have been devoted to the study of the gall bladder and vermiform appendix, that one of the most important organs in the abdomen, viz.: the pancreas, has been neglected. It is only quite recently that internists and surgeons have devoted much time to the careful investigation of diseases of this organ. It is the difficulty of diagnosis which, more than anything else, prevents the more rapid development of the surgery of the pancreas. The clinical picture of acute pancreatitis is so striking, the symptoms appear so suddenly, and with such intensity that Osler considers it one of the severest forms of the "acute abdomen," much more so than that of acute perforative peritonitis.

ETIOLOGY.

Osler, during a discussion of this subject at the meeting of the British Medical Association, July, 1907, stated that "there were three main causes of acute pancreatitis; *first*, a mechanical cause, as calculus in the common bile duct leading to bacterial infection. A calculus in the pancreatic duct was, however, rare. *Secondly*, a chemical cause, as bile, gastric juice or duodenal contents; and *thirdly*, and most important of all, an infective cause—the various pathogenic organisms living in the intestine." The organism most commonly

present is the *B. coli communis*, next come the streptococci and the staphylococci. "It was well known that the pancreatic juice had bacterial properties and it was not until stasis had occurred that infection resulted.

The frequency of the association of gall stones with acute pancreatitis was very remarkable—it occurred in nearly half of the cases; as an especially favorite site for the gall stone was the ampulla of Vater. A stone might, however, be present in Vater's ampulla for years without giving rise to suppuration, the patient merely having periodical rigors, slight pyrexia, jaundice and pain. Still, it was in these cases where there was stasis of the bile that acute pancreatitis was liable to develop."

It has been reported by a large number of observers that in many cases of hemorrhage, and of hemorrhagic and gangrenous pancreatitis, gall stones found in the gall bladder and bile passages at autopsy have been small and are often described as pea size. A small calculus only partially filling the ampulla of Vater can convert the two ducts into a continuous channel. Opie in his work on the pancreas reports a case of Halsted's to illustrate this point. He has also shown both clinically and experimentally that bile diverted into the pancreatic duct by a biliary calculus is capable of producing acute pancreatitis. Recent experiments by Flexner, however, tend to prove that the inflammatory changes are directly due to the action of the bile salts upon the pancreatic cells, and it is probable that other irritating substances may act in a similar manner. He also states that it is only when fresh unaltered bile gains entry into the duct of Wirsung that it sets up the very acute and fulminating lesions of the gland. In this connection Jayne (1) gives the history of a case where positive evidence of a

disturbance of the bile passages was followed within forty-eight hours with local symptoms of an acute pancreatitis. "Chronic obstruction of the biliary passages causes a loss of diffusible bile salts and an increase of colloid material with an accumulation of albuminous products, all of which tend to favor the production of chronic changes in the gland." Osler, on the other hand, states "that it was improbable that bile alone independent of bacterial invasion was able to set up the disease. He also states that a very large number of the cases showed gastro-intestinal disturbance, and a large proportion of those were alcoholic; the condition present was probably duodenitis, with blocking of the duct." Egdahl (2) in a most interesting table made up from a study of the histories of 105 cases, gives the following as the most frequent causes of acute pancreatitis; gall stones or suspected gall stones 44; gastro-intestinal disturbances 32; mumps 11; typhoid fever 2; miscellaneous 14.

SYMPTOMS.

Its onset is sudden with intense colicky epigastric pain, recurring in paroxysms, later becoming general and greatly increased by movements of the body. Erdmann (3) reports three cases of which pain in the back of an intense splitting character had been an important symptom. The pain is quickly followed by vomiting, similar to that of an acute intestinal obstruction affecting the upper part of the small intestine; in some cases persistent hiccough may appear. Rapid distension of the abdomen quickly follows, with rigidity and tenderness most marked about the umbilicus. There is marked collapse, the face and extremities are cold, often cyanotic and covered with a cold perspiration. Slight

jaundice may be present. The pulse is small and rapid, the temperature may or may not be high, but in the hemorrhagic form it is usually subnormal.

Osler states that in some cases a diffuse swelling might be appreciable in the upper abdomen; this, however, was often obscured by the rapid distension of the abdomen.

Kraft, quoted by Egdahl, says: "The pain begins with the hemorrhage which causes a stretching of the pancreatic capsule and of the retro-peritoneal portion of the peritoneum in the saccus epiploicus. If the stretching remains stationary for some time the peritoneum adapts itself to the pressure and the pain lessens or disappears to recur again with any new hemorrhage."

METABOLIC SYMPTOMS.

Under this head Mayo Robson and Cammidge (4) state that "Glycosuria is by no means a common symptom of pancreatic disease, and cannot be relied upon as a diagnostic symptom. When present it indicates a serious, although not necessarily hopeless, condition." Woolsey (5) in one case found glycosuria present in large amount on the first day, but it had disappeared on the third. In two cases seen for the first time on the first and third day of attack it was not noted. In Erdmann's five cases, no sugar was found before or following the operation. Thayer (6) reports five cases in which no sugar was found. No sugar was found in my own case, either before or after operation. Egdahl, in 105 reported cases found that sugar was present only in six cases. Opie feels that the urine of all cases of suspected acute pancreatitis should be examined for fat splitting ferments (lipase). Lipase was shown by Hewlett to be a constant factor in the urine

of all cases of insult to the pancreas, but to obtain this reaction requires a complex chemical outfit and process, and a period of more than 20 hours actual preparation. As some cases of acute pancreatitis die within twenty-four hours from the onset of the attack, the surgeon who waits for the chemist's report loses the opportunity of saving the patient's life.

Mayo Robson and Cammidge in their recently published work mentioned above, claim that by the use of their improved method of applying Cammidge's pancreatic reaction in the urine they have found a test that will give a positive reaction "in all cases where there are active inflammatory changes in the pancreas. Acute pancreatitis can be distinguished from intestinal obstruction, and other conditions with which it is liable to be confused. In our experience a characteristic pancreatic reaction in the urine has always been associated with evidence of disease of the pancreas at operation or post mortem, in all cases where it has been possible to investigate the condition of the gland, and information kindly supplied to one of us by others regarding cases examined for them confirms our opinion of the clinical value of the test." The time required to make the test is much shorter than other tests, and by the improved method some of the possible sources of manipulative error in inexperienced hands may be removed. Nevertheless, they advise that it is always best to control the urine examination by an investigation of the feces.

DIAGNOSIS.

Up to the present time a correct diagnosis is not made in most of the cases until the exploratory incision reveals the presence of fat necrosis, with frequently the

escape of a peculiar bloody, beef broth-like serum. If fat necrosis is not present a hemorrhagic exudate may be found which will lead to a diagnosis. In this connection Osler states "that it was an important distinctive anatomical point that in the acute pancreatic hemorrhage cases there was no fat necrosis."

Cammidge speaking of the difficulties in the diagnosis of acute pancreatitis, states that of fifty reported cases that he studied only five were correctly diagnosed as acute pancreatitis. Osler states that "the diagnosis of this disease is often impossible. The very same symptoms might be found in an attack of severe hepatic colic, in acute perforation of the stomach, or acute obstruction of the bowel high up. In the diagnosis the history was of the greatest importance." If the above symptoms occur in connection with corpulence, alcoholism, previous history of gall stones, gastroduodenal catarrh, or arterio-sclerosis,—conditions in which acute hemorrhagic pancreatitis is most often found,—together with a sudden onset of symptoms, the diagnosis of acute pancreatitis is most probable.

As an aid to diagnosis Moynihan mentions a case of Hauseman's, where bright-red spots occurred on the skin over underlying foci of necrosis in the subcutaneous fat.

PROGNOSIS.

In the very acute cases death may take place within twenty-four hours. Doberauer and Guleke, quoted by Egdahl, have both recently published papers showing that absorbed trypsin is the cause of marked collapse and death in acute pancreatitis. In reference to prognosis Osler states that "cases in which gall stones were present

were particularly fatal, and taking a large series of cases 90% of those not operated on died, and of those operated on more than 50% recovered."

TREATMENT.

In the very acute cases the abdomen should be opened in the median line above the umbilicus, at once, and the peritoneal cavity drained. If the patient is in a collapsed condition this can easily be done under local anaesthesia. Woolsey (7) reports two personal cases, and mentions five others treated by simple draining which not only relieved the symptoms, but warded off inflammation and abscess of the pancreas. In cases which are not collapsed if, on opening the abdomen, a swelling in the region of the pancreas with effusion of blood and associated with fat necrosis; or, if a tensely distended and inflamed gland be found, it should be punctured or incised and drained anteriorly, or posteriorly in the left costo-vertebral angle. In case of large abscess, drainage in both directions is preferable. In their early experience in the treatment of this disease many surgeons advised against puncture or incision of the pancreas as it added special danger to the operation, viz., lack of peritoneal adhesions, leading to peritonitis; fat necrosis of the subperitoneal fat; and chronic fistula with irritation of the surrounding skin. It is pleasing to note that in the very latest reports of cases operated on, surgeons are not influenced by these special dangers. The question of removing gall stones or draining the gall bladder or bile passages must be decided by the condition of each individual case. In the very acute cases the surgeon must remember that nothing should be done that will seriously add to the length of the operation or imperil life by adding

to the shock. Erdmann reports two cases of acute pancreatitis, complicated with numerous stones in the gall bladder. In addition to the operation for the pancreatitis he drained the gall bladder; both cases died. It has been stated under prognosis that cases in which gall stones were present were particularly fatal. I think this is a very powerful argument in favor of surgical treatment of gall stones as soon as their presence is made known by active symptoms.

The collapse and shock are best overcome by long continued proctoclysis, Murphy's method.

History of Case. On the afternoon of November 14th, 1906, I was asked to see R. F., aged 23, married, at her home. I found the patient to be a very well nourished woman who gave the following history. For the last two years had suffered at various times with backache and abdominal pains, cramplike in character, located in the epigastrium, associated with constipation but without vomiting. More recently these attacks have come on every one or two months with increased difficulty in moving the bowels.

Present illness began four days ago with cramplike pains in epigastrium and back. Vomited frequently, bilious in character and associated with singultus and frequent eructation of gas. On second day of illness patient was seen at her house by Dr. A. E. Isaacs who made diagnosis of gallstone colic and ordered morphia. For twenty-four hours after, patient was much relieved, but the symptoms returned with greater severity. When I saw her she had the facies of one dangerously ill, but not collapsed. The pain in the epigastric region was intense, more on the right side and greatly increased on motion, there was marked tenderness and rigidity over the appendix, the abdomen was distended and tympanitic, vomiting of a bilious fluid was constant, bowels had responded slightly to an enema, some flatus had passed. No tumor was felt. Pulse was weak, 120, temp. 102 deg. There was no cyanosis and no marked pain

in the back. I informed the husband that his wife was suffering from appendicitis in addition to the inflammation of the gall bladder, that she was in a very serious condition and needed to be operated on at once. He consented to have her removed to Beth Israel Hospital where she was placed on the general service. After she reached the hospital a blood count was made with the following result; leucocytosis 17,600, differential; polymorphonuclears 81%, small lymphocytes 12.5%, large lymphocytes 6.5%. The urine was acid, sp. gr. 1028, a very marked trace of albumin, a few hyaline and granular casts, some pus and no sugar. The condition of the urine remained about the same until the end. Patient was operated on early in the evening of the day of admission (fourth day of disease), Dr. A. E. Isaacs kindly operating for Dr. Gwyer, to whom I am indebted for the use of the history of the case. An incision three inches in length was made to right of median line beginning about two inches below the umbilicus. In opening the peritoneum a large amount of bloody serum escaped being forced out from between the coils of intestine and from the pelvis. Appendix was normal except for the congestion, which it shared in common with that of all the abdominal organs. On its mesentery, however, were a few spots of fat necrosis. Many similar spots were found on the mesentery and omentum. Incision was extended upward well above the umbilicus. Gall bladder was found of normal size and contained several calculi, but none were found in the ducts.

Examination of the pancreas revealed enlarged and indurated head, surface granular, and in this portion of the abdomen the mesentery and omentum were fairly studded with spots of fat necrosis. A cigarette drain was passed into the pelvis and the wound closed with layer sutures, a small rubber tissue drain being placed in the lower angle of the wound to drain superficial tissues. Patient reacted badly after the operation, vomited constantly, large amounts of dark brown fluid being thrown out; this was partially relieved by the use of the stomach tube and hot alkaline solution. The use of the stomach tube was repeated several times during the next few days. Six hours after operation temperature rose to

104.8; on the morning of the third day it fell to 100.2, after that it began to rise and continued to oscillate from 101 deg. to 104, until the day of her death (Dec. 9th, 1906, the 25th day after the operation) when it reached 107 deg. The interesting features of this case after operation, were the almost persistent vomiting, bilious in character; the severe pain in the upper abdomen and after the second week, in the back; a frequent and noisy delirium, relieved only by hypodermic injections of morphia gr. 1-6 or codeia gr. ½. A blood stained fluid came from the wound for the first three or four days in such quantities as to require frequent change of dressings; this gradually became sero-purulent and finally purulent. For the first three weeks small masses were found on the dressings and floating out of the wound. The pathologist reported that these were masses of necrotic tissue with almost pure cultures of streptococci. As the patient grew weaker the edges of the wound began to separate until finally a day before she died the wound was entirely open. On the day the patient died there was complete suppression of urine. Unfortunately we were unable to obtain an autopsy or even make an examination through the incision.

A careful study of the symptoms present after operation, viz., constant vomiting; pain first anteriorly then changing to the back; serious fluid changing to pus; and discharge of small pieces of necrotic tissue, indicate to my mind, that simple drainage in this case did not help the patient, but that the pancreas became necrotic with abscess formation, and death came from exhaustion.

About six or seven years ago quite a number of cases of acute pancreatitis occurred in this city. I operated on three, all were women of middle age and obese. The diagnosis of acute appendicitis was made in all, but when the abdomen was opened and evidence of fat necrosis appeared the diagnosis was changed.

The first case was operated on in Gouverneur Hospital and was the exact counter-

part of the case mentioned above. She lived about the same length of time; edges of the wound separated in the same way; and the characteristic discharge was the same. No autopsy was obtained.

The second case, operated on in the New York Infirmary, died of acute peritonitis within five days after removal of the appendix, with drainage.

The third case operated on in St. Mark's Hospital, with removal of appendix and drainage, recovered. In December, 1906, two Italian patients, men of middle age, were admitted to Gouverneur Hospital in collapse, no history was obtained. When the abdomen was opened in each case an acute pancreatitis was found. Both cases died soon after operation. No autopsies obtained.

- (1) *Annals of Surgery*, Dec., 1907.
- (2) *Johns Hopkins' Hosp. Bull.*, April, 1907.
- (3) *American Journal of Obstetrics*. Vol. LIV, No. 6.
- (4) "The Pancreas, its Surgery and Pathology," W. B. Saunders Co., Oct., 1907.
- (5) *Annals of Surgery*, July, 1903.
- (6) *Johns Hopkins' Hosp. Bull.*, Nov., 1903.
- (7) *Medical News*, July 16th, 1904.

Tincture of Iodine in Puerperal Fever.—Aldo Mergari in *La Riforma Medica* reports his method of using iodine as an intrauterine injection in cases of puerperal fever. It has had favorable results even in severe cases. He disinfects the vagina, in case it is necessary lightly cures the endometrium, and by using a Doleris sound injects into the uterus from 150 to 100 grams of a mixture of equal parts of tincture of iodine and warm water. It is necessary to make sure of a return flow. After some minutes, or on the slightest pain, the fluid is allowed to flow out, and the cavity is washed out with boiled water to remove the excess of iodine. No tampons are used. The author has obtained a cure in seven cases of puerperal fever with very rapid results from the injections. The good results are ascribed to the large amount of iodine used and the nascent state of the iodine.

PRIMARY CANCER OF THE HEAD OF THE PANCREAS CAUSING OBSTRUCTIVE JAUNDICE.

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As diseases of the pancreas are often difficult of diagnosis, the report of the following case may prove both interesting and instructive.

The patient was a white man, 65 years old, born in Ireland, a laborer; he was admitted to the Philadelphia Hospital on the seventh of September, 1906, complaining of jaundice, some epigastric pain and headache. His family history was good. The patient had had the ordinary diseases of childhood, but since then had never been ill in bed. He was single. He came to America from Ireland when a young man, and had ever since lived in Philadelphia. Venereal disease was denied. The patient admitted drinking beer, occasionally to excess, and to using tobacco to excess.

Two weeks before admission the skin began to get yellow and the patient to feel weak. The skin color deepened and the pain in the abdomen and back began to get severe. The urine became very dark and the stools hard and of a lead color.

The general appearance of the patient was that of a well nourished man of medium height, inclined to obesity, who gives his age as 65 but looks older. He is drowsy and very yellow. The scalp, ears and nose show nothing noteworthy. The eyelids are normal; the conjunctiva very yellow; the ocular movements normal, pupils equal, of normal size, regular in outline; react well to light, accommodation and convergence. Lips dry, yellowish; teeth much decayed; many stumps left. Tongue protruded slowly in midline; not tremulous, heavily coated with white. The facies dull. The neck is short, thick and shows no abnormal pulsation or mass. The spine normal, except for some stiffness which interferes with movements. The patient complains of pain in the loins, but no abnormal physical signs are detected.

The chest is well developed, expansion good and equal; well covered with hair. The lungs are resonant on percussions. Vocal fremitus and vocal resonance are normal. Breath sounds faintly audible. No rales. The pulse is of fair volume and tension, rhythmical, regular, 70 to 80 per minute. The arteries are only slightly hardened. The heart shows no bulging; no cardiac impulse can be seen; apex beat not visible or palpable. Area of dullness right border of sternum, third rib, fifth intercostal space a finger-breadth within M. C. line. No thrill or shock. Sounds very distant and but slightly audible. No murmurs.

The abdomen was large, well formed; wall well supplied with fat; no hernia; walls flaccid; poor reflex tone. Liver reaches from fifth rib to one inch below costal border in M. C. line. Spleen not enlarged. Stomach resonance almost to umbilicus. Colon distended with gas. No ascites; no abnormal mass detected. The patient complains of tenderness in the lower part of abdomen but of none in liver or gall-bladder region. Genital organs normal.

The hands show marks of hard labor. The little fingers show some contracture due to hard work; otherwise negative. Marks of old leg ulcers on both legs in midtibial region. Reflexes diminished. Skin golden yellow.

On September 10 it was noted that the patient was less jaundiced. The urine was still highly bile-stained. The feces were of yellow color. The patient was running a temperature of 100° to 102.5°. He was quiet and seemed asleep the greater part of the time. On being closely questioned as to the onset of his illness, he said it began about August 23 with pain in the epigastrium, which did not radiate but was worse at night. He was obliged to quit work and consult a doctor; that he had lost about 25 pounds in weight. A note on September 29 speaks of the jaundice as about the same and the stools as putty colored.

When I came on duty at the hospital, October 1, the patient was deeply jaundiced. The urine always contained bile and the feces were pale. Massive feces were not noted. The liver was enlarged, and from its lower border projected a mass which

I regarded as an enlarged gall-bladder. I examined this patient repeatedly during the five or six weeks he was under my care. He presented the usual aspect of a patient with chronic obstructive jaundice. The jaundice was persistent but not invariably of the same intensity. For a while after I came on duty in the hospital the jaundice lessened in intensity for a few days, but again deepened, and soon on the face became mahogany, almost greenish in hue. So also the feces showed absence of bile, but were not always completely acholic. The urine was always more or less deeply bile stained.

From his admission to hospital the patient never complained of pain except that he had at the beginning some epigastric and lumbar pain. He would say repeatedly in answer to questions, "I have neither ache nor pain, just weakness." He lay in bed, able to eat and sleep, and while very weak and rather apathetic, he was mentally clear.

The liver was always enlarged after I saw him, projecting below the costal margin halfway to the umbilicus. Below its edge in about the right nipple line could be felt a rounded, globular, elastic tumor, which descended with the liver on inspiration. There was never any tenderness on palpation, and I never found this tumor absent. On account of its situation and palpatory characteristics it was regarded as a distended gall-bladder. No tumor was felt in the epigastrium.

On October 23 it was noted that the patient was weaker. "The persistence of jaundice, the absence of recurring attacks of pain, the enlarged gall-bladder, make it probable that the disease is not stone in the common duct but cancer of the duct or of some structure in such proximity to it that obstruction of the duct results." This was as near to an exact diagnosis as I felt the facts warranted.

The urine had always contained albumin, bile and casts.

On September 27 the hemoglobin was 95%. The red blood cells 5,240,000; leucocytes 11,000. A differential count resulted as follows: Small mononuclears 1.66%; large mononuclears 12.05%; polymorphonuclears 80.35%; eosinophiles 1.21%.

The feces contained fat and no bile. There is no report as to the presence of muscle fibre.

By October 17 the hemoglobin had fallen to 60 per cent. Although it was considered very improbable that the cause of the chronic jaundice could be stone in the common duct, it was nevertheless thought that he should have the chance which an exploratory operation would afford. But owing to a series of delays he was not transferred to the surgical ward until November 5. He died without operation on November 9.

The autopsy discovered primary cancer of the pancreas; secondary cancer of the liver; obstructive jaundice due to pressure upon the common duct of the cancer of the pancreas; chronic diffuse nephritis; oedema of the lungs; valvulitis.

The diagnosis in this case was clearly jaundice due to obstruction of the common bile duct; but which one of the several possible causes of obstruction was operative was not clear.

The causes of obstruction to be considered are: Stone in the common bile duct; stone in the ampulla of Vater; cancer of the duct; cancer of the duodenum occluding the orifice of the duct; compression of the duct by tumors adjacent to it (i. e., cancer of the head of the pancreas).

Stone in the common duct is usually preceded by attacks of gall-stone colic. Sometimes these have preceded for years, with or without jaundice. But in rare instances a stone may completely block the common duct causing permanent occlusion; or a large stone may lodge in the cystic duct and compress the common duct. The more common forms of stone in the duct, such as cause partial occlusion, or behave like a ball-valve, could not account for the symptoms in our case. For there were no recurring attacks of pain, no chill, fever and sweat, and no such alternation in the jaundice as one would expect. It is true the jaundice did vary slightly, but not sufficiently to accord with the usual symptomatology in partial ob-

struction of the duct from stone. Moreover, the gall-bladder was enlarged, which most authorities regard as against obstruction from stone.

In 109 fully described cases of dilatation of the gall-bladder, Courvoisier found only 17 that were due to occlusion by stone; and on the other hand he found 78 cases in which, in spite of occlusion of the common duct and a patulous cystic duct, the gall-bladder was not enlarged but atrophic. Of these, 70, or 90 per cent, were cases of impaction of stone in the common duct. Many authors, including Naunyn, Kehr, Langenbuch, Bohnstedt, Osler and Musser agree with him. The fact that the gall-bladder is generally small in obstruction of the choledochus due to stone, but dilated in cancer of the biliary passages and in compression of the duct due to tumors, has been spoken of by some writers as *Courvoisier's Law*.

Kraus, however, says that in four positive cases of obstruction due to stone, he remembers that the gall-bladder was more or less enlarged to palpation. On the other hand, in his 8 cases of primary carcinoma of the choledochus, during the entire course of the disease the gall-bladder was four times non-palpable, and in his 7 cases of cancer of the head of the pancreas with occlusion of the common duct, this was the case 3 times. He concludes therefore that in the differential diagnosis between occlusion of the choledochus due to stone and due to tumor, after all has been said, and apart from the fact that the exceptions also must be considered (on account of the rarity of the cases) no actual pathognomonic importance can be attributed to the Courvoisier symptom, the value of which he believes is often exaggerated.

Herringham¹, whose opinion is based upon 17 cases of primary cancer of the pancreas examined post mortem, and upon 40 cases reported elsewhere, agrees with the majority of writers in attaching importance to dilatation of the gall-bladder in the diagnosis of cancer of the pancreas; for he says "if the gall-bladder be not dilated the diagnosis must be uncertain."

Chills and fever. The onset of pain with chills and followed by jaundice points to gall-stones as the cause. The chills and the fever are in the great majority of cases due to infectious processes in the biliary passages.

Other things which indicate obstruction of the duct due to stone are a long duration of the illness, and in spite of the long duration of jaundice of less intensity than that found in malignant disease. As to the duration, this may be several years in the case of cholelithiasis, whereas obstructive jaundice due to cancer of the biliary passages or head of the pancreas usually lasts from three to six months. Moreover, it is the commonly accepted belief that the jaundice due to obstruction by stone is not so deep nor so persistent, that the deep mahogany tint, or a peculiar compound of brown and green, is found in the cases of cancer, and when once jaundice sets in it is persistent. This agrees with my experience, but I have already mentioned that in the present case there were variations in the intensity of the jaundice, but they were of short duration and were not sufficient to make the patient free of jaundice at any time. On the other hand in obstruction due to stone, there may be marked variations from time to time, and especially late in the disease, due to dilatation of the ducts and to the escape of bile around

the seat of obstruction. If there be a difference in the intensity of the jaundice in cases of cancer of the bile ducts or compression of the duct by cancer of the head of the pancreas, it is early, not late.

If, as in our case, the probable diagnosis was of obstructive jaundice due to causes other than stone, we had still to consider other causes of obstruction, namely cancer of the common duct, cancer of the intestine including the ampulla of Vater, cancer of the head of the pancreas compressing the common duct, and other tumors of the liver or biliary passages compressing the common duct. The compression of the duct is sometimes due to enlargement of the lymph glands in the pylorus secondary to cancer of the stomach and other abdominal organs.

Osler mentions as rare causes of obstruction aneurism of a branch of the celiac axis of the aorta, and the pressure of any large abdominal tumors.

Obstruction, moreover, may not be the result of compression, but of stenosis from contraction of scar tissue following ulceration caused by the passage of a gall-stone or due to other causes. Osler states that instances are extremely rare in which foreign bodies, such as the seeds of various fruits, may enter the duct, and occasionally round worms crawl into it. Liver-flukes and echinococci are rare causes of obstruction in man.

Cancer of the Bile Ducts. Primary carcinoma of the bile ducts is not as rare as we commonly suppose. Rolleston has notes of 80 cases. The tumor was situated as follows: in the common bile duct or at its junction with the cystic and common hepatic ducts in 57 cases; in the common hepatic duct in 18 cases; in the right or left hepatic ducts in 3, and in the cystic

¹ St. Barthol. Hosp. Rep. Vol. XXX, 1894.

duct, and cystic and lower end of bile duct, in 1 each.

Of the cases situated in the common duct (57), 21 were at the lower end, 11 in the middle part and 25 at the junction of the common bile and cystic and hepatic ducts. The growth is firm and white, nearly always small, and a columnar celled carcinoma.

The symptoms caused by primary cancer of the common bile duct come on insidiously. Often the first thing noticed by the patient is jaundice, and even this way attracts the notice of his friends before it does his own. There gradually ensue progressive loss of flesh and strength, the jaundice persists, becoming gradually deeper until it is deep mahogany or dark green, and the patient dies with cholemic symptoms. Dyspeptic symptoms are common, a coated tongue, foul breath, nausea, vomiting and diarrhea, loss of appetite. The stools are lacking in bile.

Pain is not a constant or marked symptom. Sometimes the patient does not complain of any, and its existence is elicited by inquiry. It is more commonly of a dull character and referred to the epigastrium or right hypochondrium. Occasionally there are sharp colicky pains resembling gall-stone colic and indeed gall-stones may be present; but the pain is usually attributed to spasm of the tube excited by the growth.

The gall-bladder is generally enlarged. Rolleston says it is nearly always enlarged except when the growth involves the common hepatic or hepatic ducts, but that it is not necessarily always palpable during life. In my case the gall-bladder was considerably enlarged and easily palpated. The liver was also enlarged. But enlargement of the liver is not a constant symptom in cancer of the bile ducts. Rolleston says

it varies considerably; sometimes it is enlarged and smooth from distension with bile; at other times though large, it is concealed by tympanites or more rarely by ascites, while it may be of normal size.

No secondary growths were found in my case during life, nor is it the rule to find them, for the patient usually dies of cholemia before they develop to sufficient size to be felt. There may, however, be growths of sufficient size to press upon the portal veins and cause ascites. While Rolleston admits that ascites is not very frequently a prominent feature during life, he quotes Devic and Gallavardin to the effect that it is present in about half the cases examined after death.

The spleen is rarely palpable. The duration of the disease is usually five or six months. Death is usually from progressive weakness and cholemia, but may be from hemorrhage, or from ulceration leading to perforation of the gall-bladder and peritonitis, occasionally.

Cancer of the Head of the Pancreas. Rolleston remarks that a diagnosis between cancer of the bile ducts and cancer of the head of the pancreas causing jaundice cannot be made with any approach to confidence; but since pancreatic carcinoma is commoner, it would on the score of probabilities be diagnosed whenever their common symptoms are presented.

Sidney Philips¹ has had 20 cases of cancer of the head of the pancreas. In opposition of Fitz and Robson he found calculi in the gall-bladder in 5 of his 20 cases, and a history of calculi in a sixth. He thinks calculi in the biliary passages predispose to cancer of the pancreas.

¹Lancet, London, Feb. 16, 1907.

the symptoms, Philips says the almost destroyed by cancer symptoms resulting, and (*clin. Chir.*, 1901) early the whole) patient living with only tenderness with no alteration in cancer involves the head symptoms are due to

He describes symptoms of cancer of the pancreas as follows: For a time the symptoms of digestive disturbances, then jaundice appears coming on gradually but persistently increasing; the gall-bladder is usually distended and the liver is normal or only slightly enlarged. A tumor may be felt in the neighborhood of the pancreas. Cachexia develops and in some cases pain disturbs the patient's rest; there is some feeling of intense prostration and weakness; the feces are massive and contain an undue proportion of fat and of undigested muscle fibre; the urine contains albumen frequently, and sugar and fat rarely.

Philips says bile is not always completely absent from the feces, if the case is seen early. In one of his cases it appeared late when the growth had ulcerated through the bile duct and wall of the duodenum. The massive character of the stools and their contained fat are very constant features of pancreatic cancer.

He agrees with Robson that while pain and tenderness are usually absent in cancer of the head of the pancreas, the larger growths are often marked by extreme agony. There was pain in 8 of his cases, but in 5 there were also biliary calculi and a history of such in a sixth case. In another the growth involved the pylorus and

in another the vertebrae. "In no case in which the disease was limited to the pancreas was there pain, and when pain is present gall-stones or cancer of the gall-bladder or ducts is to be suspected." Hematemesis sometimes, and melena more often occurs. Philips does not mention glycosuria in any of his cases, but thirst very like that of diabetes was very noticeable in 3 cases and oxalate lime crystals were very constantly present in the urine in nearly all his cases.

Edema of feet from pressure on vena cava was present in 4 of his cases. When ascites is present as well as jaundice there is reason to suspect more than cancer of the head of the pancreas. Enlargement of the spleen was present in 2 of his cases. A tumor is rarely felt. He regards the Salol test as useless, and says that Sahli's test (glutoids of iodoform) gave indefinite results.

The stools in disease of the pancreas are putty colored and contain an excess of fat. I recall one case in which the fat resembled butter or toasted cheese. Müller has called attention to diminished fat-splitting in disease of the pancreas, and has proved its existence in a series of cases. Katz states that a diminution of fatty acids and soaps to below 70 per cent. of the total amount of fat in the stools favors a diminution or even a complete absence of pancreatic juice except in profuse diarrhea. Unfortunately, however, there may be considerable disease of the pancreas and yet sufficient pancreatic juice be secreted. Zoja lays the greatest stress upon the lessened quantity of soaps found in the stools. He says that the greater the percentage of soaps the more certainly may an occlusion of the pancreatic ducts be excluded; the less the quantity of soaps in proportion to the neutral fats

may occur. In the case of Zofa's test, normal digestion has been observed only state that digestion is normal. In pancreatic disease, a great deal of fat in the stools is evidence for the assumption of pancreatic affection. If no disease of the intestine or increased peristalsis is present, the insufficient fat digestion is a suspicion of disease of the pancreas is justified. Some forms of pancreatic digestion, true steatorrhoea, are so large, even macroscopically considerable amounts of fat are passed in the stool without the stool, which show distinct fat splitting with a certain increased amount of fat in the stools, and low quantities of soaps in proportion to the fatty acids and neutral fats, factors which point with great likelihood to disease of the pancreas. It can only be positively proven, however, when other symptoms due to absence of function, such as diabetes or insufficient nitrogen absorption, or certain clinical symptoms, such as tumor, bronzing of the skin or pancreatic colic are present.

Even more important in diagnosis is the presence in the feces of considerable quantities of transverse striped muscular fibers. Moreover the stools are often massive, that is to say, they are large compared with the amount of food ingested.

Sahli recommends glutoid capsules containing iodoform as a test for pancreatic digestion. Glutoid capsules are made by exposing gelatin capsules to the fumes of formaldehyde. Sahi recommends 2.3 de-

grees of hardness as the proper one to resist digestion in the stomach but to be digested by the pancreatic juice; but he does not say in his book how long an exposure to formaldehyde is necessary to produce this degree of hardness.

With normal stomach motility and sufficiently good pancreatic digestion the reaction of iodine in the saliva should appear in from 4 to 8 hours. It is probably of value only when it gives a negative result. That is, when the iodine reaction appears promptly in the saliva.

Schmidt has proposed as a substitute for Sahli's method the ingestion of meat and the subsequent examination of the meat in the stools for nuclei. Fresh (somewhat marbled) beef is cut in cubes of about $\frac{1}{2}$ to $\frac{3}{4}$ cm. thick and preserved in alcohol. After hardening they are placed in very small gauze bags and again preserved in alcohol. Before using, the little bags must be well washed in water for several hours. The meat is given with the test-diet and repeated for several days at noon. The little bags can easily be found again in rubbing up or sifting the excrement. They are then rinsed off in water and examined either fresh (with acetic acid or solution of methylene blue) or (in doubtful cases) after preparatory hardening and staining for the presence of nuclei.

Schmidt declares that the nuclei are never preserved in disorders of the liver, intestine or stomach, but are preserved in destruction of the pancreas. He avers that if all the nuclei reappear there exists an extreme disturbance of the pancreatic excretion.

Unfortunately, however, Schmidt's test of the persistence of the nuclei of muscle fiber in pancreatic disease can only be considered positive when all or nearly all the

nuclei persist, and this does not occur except when the pancreas is totally destroyed or its ducts completely occluded. In other words it is of no value for partial disease of the pancreas. There may be considerable disease of the pancreas and yet sufficient escape of pancreatic juice to digest meat completely. This fact Schmidt himself recognizes. Moreover, if the meat remain long in the intestine the nuclei may be digested by bacteria.

The value of fat in the stools seems also to have been overestimated. Steele in his review of diseases of the pancreas in *Progressive Medicine*, 1906, quotes with approval Brugsch's statement that deficient fat-splitting is not a valuable sign of pancreatic disease, and that fat-spitting is not affected by suppression of the pancreatic secretion. Some degree of fat-splitting is accomplished by all the organs which are concerned with digestion. It may be that a diminished proportion of soap compared with fatty acids in the stools may prove of some value in the diagnosis. But the conclusion is forced upon the writer that at present we have no reliable test for partial disease of the pancreas, and that even in complete occlusion of the ducts the tests are not satisfactory. If this is true in disease of the pancreas alone, it is even more true when there is at the same time complete absence of bile from the stools.

In the work of Robson and Cammidge¹ which has just been issued an analysis of the feces of 100 cases of suspected disease of the pancreas is reported on. Among these cases were 24 of malignant disease of the pancreas. The stools were acid in 22, neutral in 1 and alkaline in 1. Stercobilin was present in 1, traces of it in 2,

and absent in 22. The stools were white in 22, and yellow in 2. The average percentage of total fat was 77, of neutral fat 50, and of fatty acid 27. But the percentage of total fat varied between 93 and 40 per cent., of neutral fat, between 69 and 31 per cent., and of fatty acid from 36 to 3 per cent. Such wide variations must lessen the value of the findings in any case.

Cammidge also reports upon the result of his improved pancreatic reaction in 250 consecutive examinations. In acute and chronic pancreatitis the result was positive in every case. In 16 cases of cancer of the pancreas the test was positive in only 4, negative in 12. It was also negative in 50 normal cases.

To sum up then, one is usually able to distinguish between a chronic jaundice due to cholelithiasis or stone in the common duct from cancer of the ducts, or of the head of the pancreas and neighboring parts; but it is extremely difficult and may be impossible to tell which one of the latter causes is operative.

Therapeutics of the Salts of Calcium¹.—

The use of calcium salts is recommended by Ross in chilblains, 10 grains thrice daily in a tumblerful of water; in ulcers of the leg, the iodide, 3 grains thrice daily; in epistaxis, the chloride, 15 grains twice daily; in painless œdema of the ankles, the chloride, 15 grains thrice daily for three days. In a syphilitic perforation of the hard palate, under the iodide, 3 grains thrice daily for two months, the perforation healed. In menorrhagia, with epistaxis and erythema nodosum, the chloride, 15 grains thrice daily, has been beneficial; in pneumonia with hæmoptysis, the iodide, 3 grains thrice daily for three days, gave good results. If nausea occurs, the author advises increasing the dilution of the drug.

¹The Pancreas, its Surgery and Pathology. W. B. Saunders & Co., 1907.

¹S. J. Ross, Med. Press and Circular, Sept. 4, 1907.

THE SYMPTOMATOLOGY AND TREATMENT OF DIABETES MELLITUS.

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It would appear that the characteristic symptoms of diabetes mellitus in the disease of to-day are but little altered from those of the diabetes of centuries ago, and the modern disease as we know it, may be defined as a condition of altered body metabolism, characterized by glycosuria, polyuria, polyphagia, polydipsia and emaciation.

The home of the disease is India where 10% of the total mortality of the country is due to its ravages.

Thirst and dryness of the mouth, unrelieved by drinking large quantities of water, is perhaps the first symptom as seen in America. In the tropics, however, loss of virile power and loss of knee jerk are, in the majority of cases, the first symptoms. Dryness of the skin is a prominent symptom here, while in India, more often, perspiration is a symptom. The hair is dry and brittle, and the face and form become shrunken and pale, and there is a nervous anxious expression. Osler describes the diabetic haemochromatic face as a characteristic feature of the so-called bronzed diabetes. The appetite is usually much increased in the early stages, but lost toward the end. Its condition is not a reliable symptom.

Emaciation is very constant and is more marked in younger patients. Loss of muscular strength is especially noticeable in

the acute diabetes, but less marked in the mild or intermittent forms of the elderly. Sugar is found in the urine, sweat, and tears. Polyuria is regarded in this country as one of the most reliable signs, but in the tropics it is of much less significance. Retention of urine is a danger signal always. The quantity voided is in direct ratio to the quantity of sugar in the urine.

The saliva is diminished and of an acid reaction.

The gums are soft and spongy and the teeth become carious as the disease advances.

The tongue is somewhat swollen, red and fissured and the breath in a proportion of the cases possesses an acetone odor.

Chronic gastritis which is considered a complication in this country is looked upon as a very prominent symptom by Sir H. Charles in India.

Constipation is present in most cases.

Neuralgias of various nerves, especially the sciatic, are frequent and often disappear or get worse as the amount of sugar decreases or increases.

Myalgias and muscular cramps occur in many cases, and are to be regarded as suspicious symptoms. Charcot has described an intermittent limping due to this cause.

Defective accommodation and retinitis of various forms occur in 20% of all cases, and are regarded by Hirshberg as early diagnostic symptoms.

Hiccough is a prominent and annoying symptom in certain cases and is to be dreaded.

Tenderness elicited by deep percussion or pressure over the part occupied by the head of the pancreas and descending colon has been recently shown to be present in a large percentage of cases reported by Sir H. Charles.

¹ Read before the Academy of Medicine, Dec. 5th, 1907.

The urine contains sugar which varies in amount from $1\frac{1}{2}$ to 8%. The specific gravity is increased—although numerous cases have been reported where the urine contained a large quantity of sugar with specific gravity less than 1005. While sugar may be absent from the urine of the chronic diabetic for intervals, its sudden disappearance from the urine of the acute diabetic is a danger signal. Sugar in the urine is always diminished in quantity if the patient is suffering with fever. This is well demonstrated in those diabetics who have developed phthisis. In 325 cases reported by Boas, oxylate of lime was found in $26\frac{1}{2}\%$ and uric acid in $14\frac{1}{2}\%$ of the cases. Some authorities claim its presence in 90% of chronic cases. Authorities now agree that the albuminuria arising in the later stages is due to general arteriosclerosis rather than to any irritating action of the sugar on the kidneys.

COMPLICATORY SYMPTOMS AND COMPLICATIONS.

Pruritus, eczema and erythema, especially around the genitals, are the commonest skin lesions. Carbuncles and boils are next in frequency while urticaria, psoriasis, gangrene and perforating ulcers are not so common. Oedema and carcinoma are rare. The extreme rarity of cancer in diabetes may also be noted. Thus, in 225 cases reported by Naunyn only eight cases of carcinoma were observed. Kappler was able to collect but 63 cases of combined cancer and diabetes. In 336 cases of intestinal carcinoma occurring in adults, Boas found diabetes in only twelve. Boas states that carcinoma occurring in a case of acute diabetes runs a very rapid course while cancer occurring in diabetes in its quiescent stage runs a course more slowly than car-

cinoma in a non-diabetic. Another interesting point is that carcinoma of the pancreas has rarely been found associated with or producing diabetes. Boas calls attention to the fact that in a large percentage of carcinomatous diabetics there develops a remarkable tolerance for carbohydrates.

Outside of the alimentary symptoms mentioned above, it is well to call attention to the fact that diabetes, on numerous occasions has been associated with gall stones and has disappeared when the stones had been removed.

In this country, pulmonary tuberculosis is the commonest complication of the disease, more than one-third of all diabetics succumbing to phthisis. Gangrene of the lungs is not uncommon.

Broncho and lobar pneumonia, when they do occur in diabetes, are nearly always fatal. Their especial danger in this disease arises from the fact that they show but few subjective symptoms and are often discovered only at post-mortem.

In diabetics suffering from tuberculosis there occurs no reaction after injection with Koch's tuberculin (for diagnostic purposes) and further, the use of tuberculin in these cases is extremely dangerous. Sanwith (1) reports four cases of diabetes in which he injected Koch's tuberculin for phthisis. No reaction occurred in three, while the fourth case, immediately after the injection, lapsed into a state of coma and died. Prof. Koch was present at the time.

Tabes dorsalis is a frequent forerunner of diabetes. Epilepsy may cause or result from, the disease. Cerebral tumors when found post-mortem are believed to be rather the cause than the result of the disease. Hemiplegia, monoplegia, and disseminated sclerosis are frequent complications.

By October 17 the hemoglobin had fallen to 60 per cent. Although it was considered very improbable that the cause of the chronic jaundice could be stone in the common duct, it was nevertheless thought that he should have the chance which an exploratory operation would afford. But owing to a series of delays he was not transferred to the surgical ward until November 5. He died without operation on November 9.

The autopsy discovered primary cancer of the pancreas; secondary cancer of the liver; obstructive jaundice due to pressure upon the common duct of the cancer of the pancreas; chronic diffuse nephritis; oedema of the lungs; valvulitis.

The diagnosis in this case was clearly jaundice due to obstruction of the common bile duct; but which one of the several possible causes of obstruction was operative was not clear.

The causes of obstruction to be considered are: Stone in the common bile duct; stone in the ampulla of Vater; cancer of the duct; cancer of the duodenum occluding the orifice of the duct; compression of the duct by tumors adjacent to it (i. e., cancer of the head of the pancreas).

Stone in the common duct is usually preceded by attacks of gall-stone colic: Sometimes these have preceded for years, with or without jaundice. But in rare instances a stone may completely block the common duct causing permanent occlusion; or a large stone may lodge in the cystic duct and compress the common duct. The more common forms of stone in the duct, such as cause partial occlusion, or behave like a ball-valve, could not account for the symptoms in our case. For there were no recurring attacks of pain, no chill, fever and sweat, and no such alternation in the jaundice as one would expect. It is true the jaundice did vary slightly, but not sufficiently to accord with the usual symptomatology in partial ob-

struction of the duct from stone. Moreover, the gall-bladder was enlarged, which most authorities regard as against obstruction from stone.

In 109 fully described cases of dilatation of the gall-bladder, Courvoisier found only 17 that were due to occlusion by stone; and on the other hand he found 78 cases in which, in spite of occlusion of the common duct and a patulous cystic duct, the gall-bladder was not enlarged but atrophic. Of these, 70, or 90 per cent, were cases of impaction of stone in the common duct. Many authors, including Naunyn, Kehr, Langenbuch, Bohnstedt, Osler and Musser agree with him. The fact that the gall-bladder is generally small in obstruction of the choledochus due to stone, but dilated in cancer of the biliary passages and in compression of the duct due to tumors, has been spoken of by some writers as *Courvoisier's Law*.

Kraus, however, says that in four positive cases of obstruction due to stone, he remembers that the gall-bladder was more or less enlarged to palpation. On the other hand, in his 8 cases of primary carcinoma of the choledochus, during the entire course of the disease the gall-bladder was four times non-palpable, and in his 7 cases of cancer of the head of the pancreas with occlusion of the common duct, this was the case 3 times. He concludes therefore that in the differential diagnosis between occlusion of the choledochus due to stone and due to tumor, after all has been said, and apart from the fact that the exceptions also must be considered (on account of the rarity of the cases) no actual pathognomonic importance can be attributed to the Courvoisier symptom, the value of which he believes is often exaggerated.

Herringham¹, whose opinion is based upon 17 cases of primary cancer of the pancreas examined post mortem, and upon 40 cases reported elsewhere, agrees with the majority of writers in attaching importance to dilatation of the gall-bladder in the diagnosis of cancer of the pancreas; for he says "if the gall-bladder be not dilated the diagnosis must be uncertain."

Chills and fever. The onset of pain with chills and followed by jaundice points to gall-stones as the cause. The chills and the fever are in the great majority of cases due to infectious processes in the biliary passages.

Other things which indicate obstruction of the duct due to stone are a long duration of the illness, and in spite of the long duration of jaundice of less intensity than that found in malignant disease. As to the duration, this may be several years in the case of cholelithiasis, whereas obstructive jaundice due to cancer of the biliary passages or head of the pancreas usually lasts from three to six months. Moreover, it is the commonly accepted belief that the jaundice due to obstruction by stone is not so deep nor so persistent, that the deep mahogany tint, or a peculiar compound of brown and green, is found in the cases of cancer, and when once jaundice sets in it is persistent. This agrees with my experience, but I have already mentioned that in the present case there were variations in the intensity of the jaundice, but they were of short duration and were not sufficient to make the patient free of jaundice at any time. On the other hand in obstruction due to stone, there may be marked variations from time to time, and especially late in the disease, due to dilatation of the ducts and to the escape of bile around

the seat of obstruction. If there be a difference in the intensity of the jaundice in cases of cancer of the bile ducts or compression of the duct by cancer of the head of the pancreas, it is early, not late.

If, as in our case, the probable diagnosis was of obstructive jaundice due to causes other than stone, we had still to consider other causes of obstruction, namely cancer of the common duct, cancer of the intestine including the ampulla of Vater, cancer of the head of the pancreas compressing the common duct, and other tumors of the liver or biliary passages compressing the common duct. The compression of the duct is sometimes due to enlargement of the lymph glands in the pylorus secondary to cancer of the stomach and other abdominal organs.

Osler mentions as rare causes of obstruction aneurism of a branch of the celiac axis of the aorta, and the pressure of any large abdominal tumors.

Obstruction, moreover, may not be the result of compression, but of stenosis from contraction of scar tissue following ulceration caused by the passage of a gall-stone or due to other causes. Osler states that instances are extremely rare in which foreign bodies, such as the seeds of various fruits, may enter the duct, and occasionally round worms crawl into it. Liver-flukes and echinococci are rare causes of obstruction in man.

Cancer of the Bile Ducts. Primary carcinoma of the bile ducts is not as rare as we commonly suppose. Rolleston has notes of 80 cases. The tumor was situated as follows: in the common bile duct or at its junction with the cystic and common hepatic ducts in 57 cases; in the common hepatic duct in 18 cases; in the right or left hepatic ducts in 3, and in the cystic

¹St. Barthol. Hosp. Rep. Vol. XXX, 1894.

to the section of country in which it is produced. Dr. Tyson has pointed out that substitute breads containing little starch are easy to procure in Europe, and difficult in America. Flexner, however, points out that many of the so-called pure gluten breads are rich in carbohydrates.

Among the more common substitutes for white bread—besides the gluten foods—are almond bread, almond cakes, cocoanut cakes and sojabread. The latter is used extensively in Japan and is made from the bean of that name. (*Flexner.*)

Aleuronat, a powder containing 90% vegetable albumen and only 7% carbohydrates, may be used with advantage as an article of diet. (*Flexner.*) It is used extensively in Germany combined and uncombined with other ingredients.

Beef, poultry, game, fish, tongue, bacon, sardines, beef tea, broth and soups may be taken. Liver, oysters, cockles and mussels, owing to the large amount of glycogen they contain are harmful. Eggs are very useful.

Large quantities of milk may be given in mild cases but the amount should not exceed a pint a day in severe ones. Whenever milk is prescribed, the urine should be carefully watched. Cream, on account of the absence of lactose and presence of fats, as a rule, forms a food par excellence. In fact, butter, suet, cream and eggs and all other facts are admissible. Oil salads with meals, or cod liver oil after meals should be given. Owing to the small amount of leuculose they contain, cooked apples, raspberries, stewed gooseberries, peaches, apricots and melons may be given with cream. Nuts, cocoanuts and almonds are useful. Chestnuts, dates, figs, currants, dried raisins, prunes and plums should be prohibited.

As a substitute for sugar, diabetics may use saccharin, saxin or dulcin. Vegetables containing considerable starch are prohibited. Brussels sprouts, spinach, sorrel cucumbers, mushrooms, celery, onions and French beans are all permissible.

Beverages:—Among the beverages, tea, coffee, aerated waters, light wines such as Bordeaux, dry sherry, whiskey and brandy may be allowed and are often useful as they have a calorific effect. Cocoa, chocolate and sweet wines, such as port, Madeira and champagne or lemonade containing sugar, should not be indulged in.

Medicinal Treatment.—Medicinal remedies for the treatment of this disease are as numerous as the theories as to its cause. To treat a case of diabetes with a pancreatic extract and then find at post-mortem that the disease was due to a gumma of the fourth ventricle, is not such an uncommon occurrence, and indicates that in the majority of cases we must consider diabetes not as a distinct disease but as a symptom or a group of symptoms of a condition of altered metabolism; just as we consider uræmia a symptom or group of symptoms of altered renal functions. Our first step, therefore, after recognizing diabetic symptoms is to diagnose the cause and treat it.

If the patient presents a history of syphilis it may be well to put him on a course of potassium iodide before beginning special treatment. If his symptoms point to pancreatic origin, the pancreatic extracts are indicated.

If the cause is thought to be pancreatic calculi, surgical intervention will probably be the best remedy.

Brown (4) reported two cases of diabetes which he cured by fixing a right floating kidney. Surgical intervention is again the

only remedy if the disease is thought to be caused by trouble in the fourth ventricle of the brain.

It is in those cases of diabetes in which there is no discoverable clue to a cause that we have to treat experimentally. Among the many remedies codein has given better success than any other. It should be started in half-grain doses and worked up to 10 or 15 grains daily.

Arsenic has been advocated by many. Salkowski discovered that in animals poisoned by arsenic artificial diabetes could not be produced.

If we follow Sajous' recent theory that diabetes originates from super- or hypo-activity of the adrenal system, we should, if the case be asthenic diabetes, or that which results from over-activity of the adrenal system, give arsenic which is an adrenal depressant. Should we believe it to be a case of asthenic diabetes or that form resulting from under-activity of the adrenal system, we should give thyroid extract which will stimulate adrenal activity. The alkalies are indicated throughout the disease but especially so at the approach of coma, as signalled by the presence in the urine of oxybutyric acid and excess of acetones and ammonia. If sodium bicarbonate in large doses be given, the ammonia excreted may be reduced 10 to 30 per cent. We must remember, however, that the relief is not permanent, for the formation of acetonc bodies, oxybutyric acids, etc., is not prevented by giving the alkalies. Quinine, jambul, salicylate of bismuth, have all been advocated. Sodium salicylate in increasing doses has had a number of advocates. Antipyrine is extensively used in France.

Glutaric acid ($C_5H_8O_4$) a drug up to the present time used only in an experimental way to cure diabetes in dogs, is just

now causing interest in Europe. J. Baer and L. Blum (5) have been studying the influence of various substances on acidosis and glycosuria under equal and known conditions. Dogs were rendered diabetic by injection of phlorozin and also another group of dogs were rendered diabetic by excisions of their pancreas. In the course of the experiments it was found that glutaric acid had the power of influencing glycosuria, acidosis and the elimination of nitrogen. When this substance was injected into dogs rendered diabetic by phlorizin, the glycosuria disappeared nearly or altogether, while the excretion of nitrogen was greatly diminished. That it was not the result of any action of the phlorizin is proved by a like result having been obtained in the dogs rendered diabetic by pancreatization. The conclusions arrived at were that the glutaric acid prevents the breaking up of albuminous bodies from which sugar is derived. In the more severe forms of the disease, this fact also accounts for the diminished secretion of nitrogen.

Up to the present time glutaric acid has not been used in therapeutics but, judging from the results of experiments, it promises to be worthy of future notice.

In concluding, if I leave but one idea, I would have it this: that diabetes mellitus is not a disease constant in its manifestations and symptoms, but is fickle and elusive in the extreme; that no drugs are specific hence the treatment is necessarily mostly dietetic—yet he who follows blindly and innocently the well known diet list as found in every text book, for all his cases, will benefit but a fortunate few; that each case must be studied individually; that the amount of intake must be carefully compared with the corresponding amount of output, whether it be carbohydrates, fats,

proteids, etc., and the particular article or articles of food that are offending be excluded rather than the wholesale cutting off of the class to which such food or foods may belong. Hygienic measures, cleanliness, pleasant environment and rest play an important part in the treatment, and it is desirable that the patient remains under the constant supervision of a physician, or better still in a sanitarium until his individual condition is ascertained.

- (1) British Medical Jour., Oct. 19, '07
- (2) " " " Sept. 19, '07
- (3) " " " Sept. 19, '07
- (4) Brown, Phila. Med. Jour., Vol. 9, p. 594.
- (5) British Medical Jour., Aug. 31, '07.

INFLUENZA AND WEATHER INSTABILITY.*

BY

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From the days of antiquity to quite recent times weather conditions and changes have been mystically and mysteriously related to disease by priests, prophets, and people. This is true especially of epidemic diseases, and those of unknown, obscure, or uncertain causation. Since the scientific development of meteorology in the past generation, however, and the concomitant development of a more rational epidemiology, an approach has been made in the direction of indicating, with some probability if not certainty, the relative value and qualitative character of the atmospheric influences operating upon the human body in health, and as predisposing factors in some of the communicable diseases of bacteriologic and toxic origin.

Primal instinct ingrained in the human mind has advanced to a scientific scrutiny of the atmosphere which surrounds us, because of the basal belief that a fish in the sea is not more, if as much subject to physical changes of its medium than is a man to those of his; that the element in which we live and think, study and plan, labor and love, play and progress, aspire or degenerate, do good or evil, cheer up or get gloomy, must needs have some real, perhaps measurable, modifying influence upon health, mentality, morality, achievement¹. In short, as alchemy has given place to chemistry, and astrology to astronomy, so has historic and ethnic awe, superstition, and variegated guesswork about weather and climate been followed by keener and wider perception (aided by instrumental precision), and a more penetrating and practical interpretation.

So we are witnessing the rapid, robust awakening and growth of *meteorology*. To be convinced of the phenomenal growth of this adolescent science, and of the expanding and deepening value and applicability of its data and inferences, one needs but to study the Monthly Weather Review issued by the Weather Bureau at Washington.

We are not directly concerned with climatology here, because that has a wider scope and different relation to the topic under consideration; it represents not only the sum total of the atmospheric and solar and electric influences, but various telluric, aquatic, topographic and geographic conditions also. The study of climate, too, involves a greater sweep of observation, such as the annual and monthly averages, than is appropriate to the subject at hand: the day-by-day meteorologic states and varia-

*Presented to the American Climatological Association, May, 1907.

¹ See Dexter's "Weather Influences."

tions are more to the point in considering their possible relation to the inception and course of such a comparatively short visitation as recurrent epidemic or endemic influenza usually makes.

With this differentiation before us, it may be asserted that, strictly speaking, until within a recent decade or two, no systematic meteorologic observations in relation to disease have been made, and these very few and limited in scope. Indeed, the U. S. Weather Bureau was inaugurated hardly more than a generation ago, and its wealth of data has just been digested in an assimilable form in the large volume issued a few months ago. Except that there were good grounds for believing that "coughs, colds, corns, and consumption" were influenced by weather conditions and changes, practically nothing was accomplished even down to several years ago to solve the diagnostic, prognostic, or remedial relations of atmospheric phenomena; whether certain diseases gave *prima facie* probability of such relations existing or not.

Although climatology has been studied most generally and carefully in connection with the prevalence, virulence, and management of tuberculosis, meteorologic observations have simply been accumulated partially, and analyzed more or less cursorily. Tonsillitis, erysipelas, pneumonia, influenza especially, and just lately malarial attacks have met with earnest systematic research, and some significant value of the first results. Meanwhile, much help has been derived from the independent development of meteorology from the time of the appearance of the text-book by Loomis of Yale to those of Davis of Harvard and Hann of Germany.

The very name—*influenza*—given to this disease by the Italians in the fourteenth cen-

tury, was an appropriate indication of its unescapable, penetrating, aerially permeating and diffusing characteristics. Although it is tempting to quote the ideas of the many writers upon epidemic influenza since Schönbein (who attributed it to the ozone in the atmosphere), it must suffice to refer to the author's paper before this association in 1899¹, in which it was noted that several observers had admitted that certain atmospheric states or movements make for an epidemic; and that meteorologic influences may operate either in the direction of lessening one's resistance to influenzal invasion, or, in ways yet unknown, but not improbable, of favoring the propagation and dissemination of the Pfeiffer bacilli; or quite likely, both.

Passing by such opinions as were expressed in the earlier epidemiologic history of influenza, from the time of Thomas Short in 1557, of Sydenham, Hufeland, Hagen, and others, down to the great pandemic of 1889-90, we find the same trend of theorizing just indicated applied to the "grip" in the early nineties. The recent observers, however, based their conclusions rather upon measured data, and did not advance such hypotheses or mere guess as any alert sailor or wise farmer might propound equally if not superiorly well. Thus, Assman in Germany, Dignat in France, and the writer have made direct attempts at arriving at some definite inferences from weather observations taken and recorded instrumentally and officially in connection with the years of influenza prevalence from 1889 to 1901.

Assman noticed that the great pandemic of November and December, 1889, was char-

¹ The Relation of Local Meteorologic Conditions to the Influenza Epidemic in Philadelphia, winter of 1898-99.

acterized by a very unusual drought in eastern and central Europe, by the absence of a protecting covering of snow, and by high barometer and low-lying clouds.

As the result of a study of the meteorologic conditions concomitant to influenza from 1895 to 1898, Dignat considered the following to be the chief factors preceding epidemics of *la grippe*; abnormal increase of barometric pressure; abnormal temperature ranges; abnormal predominance of north winds; weakening of the actinometric degree (or sunshine percentage).

Early in 1899 the writer began his preliminary investigations, and set forth the problems involved, in his paper just referred to. A limited comparative analysis of both antecedent and associated phenomena was made, and tentative conclusions offered, as follows: (1) Abnormal increase of the atmospheric pressure, and of the absolute range between the highest and lowest pressures for the epidemic months; (2) sudden frequent, and extreme alternations of abnormally high and low temperature ranges; (3) comparatively lower relative humidity (data too variable to be satisfactory, however); (4) diminished precipitation, but short periods of unusual fogginess and calmness alternating with periods of clear, windy weather; (5) predominance of relatively clear (fair or partly cloudy) and sunshiny days during exacerbations of influenzal attack, these periods having invariably been preceded by sudden thaws and warm, damp, cloudy, muggy weather and suffocative atmosphere, especially from the times of sunset to sunrise. This summary was based mainly upon the monthly averages.

The first seriatim study of a single meteorologic phenomenon was made in 1901, on The Relation of Sunshine to the Prevalence

of Influenza¹; the second in 1902 on Atmospheric Pressure and Epidemic Influenza in Philadelphia². The conclusion from the first study of the figures for twelve years preceding and following the pandemic of 1889-90,—that is, from a comparison of the data for a group of non-epidemic with those of decidedly epidemic years—showed, that whilst the average sunshine percentage was slightly lower for the principal epidemic months of December, January, and February, than for the same months of non-epidemic years, there was not the direct causal relation between the absence of sunshine and influenzal epidemicity that Ruhemann, of Berlin, was led to infer. Naturally, the few hours of sunshine prevailing during the short days near the winter solstice would lead one to think that somehow, nevertheless, influenza likes the darkness better than the light, and hence its greater epidemicity during the winter months.

The second seriatim study, pertaining to atmospheric pressure, showed practically nothing definite as regards the mean monthly barometric readings, the monthly means of maxima and minima, and of greatest barometric ranges, for the sporadic years of 1877-88 and the epidemic years of 1889-1901. In other words, as in the case of sunshine percentages, the behavior of atmospheric pressure in relation to influenza is characteristic only in the marked lack of equability; in the absolute daily (sometimes, almost hourly) extremes, and not in the monthly or yearly averages or means. This is borne out in the fact that the average greatest twelve-hour barometric changes during the epidemic months of 1890-1900 were uniformly greater than those of the same months for the years 1879-1889.

¹ The Medical News, Nov. 9, 1901.

² The Phila. Med. Jour., Jan. 24, 1903.

The recent recurrence of moderately severe influenza, beginning late in December, 1906, afforded me another opportunity of noting the daily meeteorologic phenomena in relation to the local epidemiologic development, and to certain clinical characteristics of the disease.

Without, at this time, burdening the paper and its readers with the recitation of tables of figures and paragraphic detailed analyses of the same, permit me just to mention the conclusions from my observations, as they simply corroborate those of my earlier papers, namely: That whatever causal relation meteorologic conditions bear to the onset, prevalence, and virulence of epidemic influenza will be found almost exclusively in quotidian, tertian, or quartan exacerbations, variations, and alternations of weather states, in other words, in the sudden, frequent, extreme and rapid changes in pressure, temperature, humidity, clearness or cloudiness, and wind pressure and direction; in short, *instability* or *non-equability* of weather phenomena to an *abnormal degree*.

Relations to Clinical Incidence. In many of the epidemics it was observed that apparently strong and sturdy as well as less robust persons were stricken suddenly and violently with influenza during what was ordinarily called fine, crisp, bracing winter weather: these patients were usually those who worked or spent considerable time outdoors. On the other hand, those who were more or less confined to houses seemed to succumb mostly during the warmer, foggy, damp, dark and cloudy days. It has seemed to me that the latter weather conditions were conducive to susceptibility to influenza in all classes, the added depression of indoor life leading also to the rapid development of the disease; while in stronger in-

dividuals the attacks were held off apparently until some chilling of the skin or sufficiently prolonged external cold damping back the blood from the periphery enabled the influenzal bacilli or toxins to overcome the hematic resistance; or, it is not improbable that during dry, dusty, windy periods immunity in the best of us was overwhelmed by large doses of actively potential and penetrating bacilli spread about under such favorable atmospheric states.

The unstable weather conditions throughout the central parts of Europe were noted particularly this past winter to have had a most depressing, deleterious effect upon the health of the population in general, and to have been associated with an increased morbidity due to influenza.

My notes of the weather records and of the cases of influenza from the middle of December, 1906, to the middle of March, 1907, bear out the preceding statements almost perfectly.

Thus it may be written that the muggy weather conditions of midwinter usually accompanying low barometer are related to influenzal predisposition as are high barometer and the associated dry, cold, windy phenomena to influenzal propagation; the former pertaining to the body, the latter to the bacilli; the one to susceptibility and incubation, the other to invasion and pathologic activity.

Finally, it may be reiterated that monthly or yearly averages or summaries of meteorologic data, barometric, thermometric, hygrometric, etc., are of small value in estimating the etiology of epidemic influenza from this viewpoint. Instability of weather conditions, however, embracing the frequency, sudden celerity, and marked extremity of changes within short periods of

time, must be blamed and branded as of credible though more or less subtle causative agency.

HEMORRHAGIC PURPURA CAUSED BY SCURVY: REPORT OF A FATAL CASE

BY

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Purpura is in reality a symptom rather than a separate entity. Almost innumerable conditions, acting on the general economy, can at one time or another produce hemorrhage into the skin. The eruption as a rule can be very easily differentiated, if the one fact be remembered that as a rupture of the smaller capillaries has occurred, the color of the lesions cannot be affected by pressure. The cutaneous outbreak having been diagnosed, the puzzling fact still remains as to the causation. Attacks not only occur in those with determinable disorders, but also in apparently the most robust individuals. In certain persons the slightest deviation from the usual routine of life will cause a localized outbreak. The most trivial occurrence, such as an unaccustomed cold plunge, exposure to changes in climate, excessive exercise, or worry may be the precursor of an attack. The legs and the ankles are the parts almost exclusively involved in the circumscribed form. The more generalized form of the disease is found in those constitutional disorders, where the system is below par. Effusion of the blood into the skin has been noted in malaria, scorbutus, pernicious anaemia, hemophilia, typhus fever, syphilis, pyaemia, rubeola, scarlatina, influenza, variola, and probably others. Various drugs have also been reported as the cause of this condition; among these the iodides, the salicylates, chloral, antipyrin,

and copaiba have been chiefly responsible. Certain micro-organisms have been suggested as causing some of the grave forms of this disease; only recently LeConnt and Batty (1) isolated the bacillus paratyphosus from a case of purpura hemorrhagica. Johnson (2) divides the causative factors of cutaneous hemorrhage into three chief groups: the vasomotor, the toxic, and the infectious. The following report is of a patient treated in the service of Dr. M. B. Hartzell, in the women's skin ward, of the Philadelphia Hospital.

The history of the case is as follows:—

M. L., a mulatto woman, thirty-three years of age, single, was admitted to the women's skin ward, of the Philadelphia Hospital, on August 21, 1907.

Family history:—Nothing in the family history had any bearing on this case.

Previous history:—The patient had had the usual diseases of childhood. She had had several attacks of pleurisy. Ten years ago she had a still-born child. Five years ago she suffered from a severe attack of typhoid fever.

Present history:—The patient, according to her statement, was in good physical condition until July the twenty-third. On that day, she felt so weak and ill, that she remained in bed. This weakness progressively increased; the gums became extremely tender. A discharge was noted from the eyes, two weeks after the patient was taken ill. Three weeks after the beginning of this illness, a pin-head to split-pea sized, macular, dull-red, hemorrhagic eruption appeared on the face; which spread generally over the whole cutaneous surface.

Physical examination:—The patient is a mulattress of spare build. She is in a semi-stupor; answering questions slowly, and with a very husky voice. The lips are covered with thick, adherent, dark-brown crusts, and there is considerable hemorrhage from the mucous membranes of the mouth. The gums are spongy and bleed at the slightest touch. The upper and the lower teeth do not approximate and are extremely loose. The conjunctivae are injected and

a purulent discharge is noted. There is a grayish film over each cornea, thus obscuring the vision. Photophobia is markedly present. A purulent discharge is noted from the vagina, the rectum, and also the nose. She coughs a great deal; expectorating profuse greenish-gray sputum, with a fetid odor. The body is almost entirely covered with hemorrhagic lesions; the external surface of the forearms, and the dorsal surface of the hands being only sparingly affected. The palms of the hands and the soles of the feet are also attacked by these purpuric lesions. These cutaneous hemorrhages are from petechial, pin-head to split-pea sized lesions, on the extremities, and the abdomen; to palm sized and larger plaques, on the back, the chest, and the face. Hemorrhages are noted also into the skin and the subcutaneous tissue of the upper eye-lids.

Chest.—The expansion is fair, although the musculature is poor. A dark areolar is noted surrounding each nipple, and the mammae are completely atrophied. The left chest is slightly flattened. The respiratory movements are irregular; the right side is the more expansile.

Lungs.—Resonance is normal over the right chest. On the left side of the chest, vocal fremitus is marked. There is dullness in percussing over the left lung; especially noticeable posteriorly, between the spine and the left scapula. There is a slightly tympanitic note, heard on the left side, over the fourth rib. Tubular breathing is noted posteriorly, throughout the left lower lobe; numerous large, moist rales being heard. Expiration is prolonged at the left apex, and the inspiratory sound is somewhat harsh.

Heart.—The area of cardiac dullness is not increased. The apex beat is diffuse; one-quarter inch inside of, and one and one-half inches below the nipple. The myocardial tone is fair, but the heart sounds are rapid and weak. There are no signs of endocardial involvement.

Abdomen.—The abdomen is scaphoid in shape. The area of liver dullness is not enlarged. The spleen is palpable but not markedly enlarged. The patient complains of pain over the abdomen; palpation reveals tenderness in the right iliac fossa.

The patient's condition remained practically stationary, for the first few days in the hospital, she being almost moribund. Her temperature ranged between the normal and 103 degrees Fahrenheit. Then her condition seemed to change for the better; the film over the eyes disappeared, the hemorrhage from the mouth almost stopped, the gums became less tender, and she became slightly stronger. This change for the better was unfortunately but temporary, as she became noticeably worse on September the second. Two days later she died; having been in the skin ward just two weeks.

Laboratory reports:

The nasal smear showed many staphylococci.

The oral smear showed many intra-cellular and extra-cellular diplococci; also spirilli, and pneumococci.

The eye smear showed a few intra- and extra-cellular diplococci, but no gonococci.

The vaginal smear was negative for gonococci, but showed many organisms of various types.

The sputum examination was negative for the tubercle bacillus.

Three blood examinations were made; on August the twenty-second, haemoglobin 45 per cent., erythrocytes 2,200,000, leucocytes 16,000, polymorphonuclears 63 per cent., large lymphocytes 12 per cent., small lymphocytes, 15 per cent., eosinophiles 10 per cent.; on August the twenty-sixth, haemoglobin 50 per cent., erythrocytes 2,800,000, leucocytes 19,000; on September the third, haemoglobin 38 per cent., erythrocytes 2,200,000, leucocytes 18,500, polymorphonuclears 98 per cent., small lymphocytes 2 per cent. The blood was very thin and markedly slow in coagulating.

Treatment.—The mucous membranes were irrigated with a saturated solution of boric acid. Five minims of Fowler's solution and of oil of turpentine were given every four hours for the first two days; strychnine sulphate one-fortieth of a grain and one tablespoonful of brandy were also given three times daily. Calcium chloride was then given in fifteen grain doses, three times daily, the Fowler's and turpentine being stopped. The calcium chloride was then stopped, and ten grain doses of the salicylate of soda was commenced; this was

administered four times daily. Lemon or lime juice, from a dessertspoonful to a tablespoonful, was given every four hours throughout the entire illness.

Pathological report:

Brown atrophy of the heart.

Left-sided septic pneumonia with multiple abscesses.

Left-sided chronic adhesive pleurisy.

Compensatory emphysema of the right lung.

Subcapsular splenic hemorrhage; perisplenitis.

Sub-acute diffuse nephritis.

Hydrosalpinx, on the right side.

Fatty infiltration of the liver; perihepatitis.

Purpura hemorrhagica.

As the pathological report is so bulky only the diagnostic headings have been included in this paper.

Scurvy immediately brings a picture before one's eyes of a long voyage, without sufficient fresh vegetables to prevent this dyscrasia. At the present time, three theories are advanced as to the causation of this disease. These theories are as follows:

1. That this condition is due to the absence in the food, of those ingredients supplied by fresh vegetables.

2. That it is due to toxic material in the food; some unknown organic poison, the product of decomposition.

3. That it is caused by some specific organism; as yet unknown.

Every phase of this patient's existence has been carefully investigated and nothing etiologic has been discovered. This case was thought to be of sufficient interest to report owing to the marked cutaneous hemorrhages; the fact that the scurvy developed in an individual living, continuously, on the land; and because of the fatal termination.

In closing I wish to express my thanks to Dr. Hartzell for the privilege of report-

ing the case; and to Dr. H. C. Rickter for the carefully prepared history and some of the pathological work.

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RECENT LITERATURE ON THE PARATHYROID GLANDS.

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Studies regarding the parathyroid glands have accumulated so rapidly during the past few years that Schirmer (*Centralb. f. d. Grenzgeb. der Med. u. Chir., Bd. 10, Nos. 11, 12 and 13, 1907*) in a lengthy review of the subject refers to 187 papers. The brief summary here presented deals chiefly with the contributions appearing during 1907. Most of them consider so many phases of the question that I have not attempted a systematic grouping under separate topics.

Not much that is new has recently been added concerning the anatomy of the organs. Halsted (*Amer. Jour. of the Med. Sciences, Vol. 134, p. 1, July, 1908*) says they may be encountered at any level from the superior to the inferior pole of the thyroid, on its postero-internal surface but most commonly just internal to the rounded postero-external border and quite regularly near the site of the distribution of the terminal branches of the inferior thyroid artery. If the thyroid be lobulated in this portion a parathyroid may be concealed in a cleft between the lobules. Not infrequently one of the bodies is situated below the inferior pole of the thyroid. He apparently raises no question as to the parathyroid origin of tetany, stating his belief that the cause of

tetany at the hands of skilful operators is less often the actual removal of the parathyroids than interference with their circulation. Halsted proposes the terms hypoparathyreosis and status parathyreoprivus to designate the state of individuals suffering from partial or complete loss of parathyroid tissue. He gives the details of a case of aborted post operative tetany in which the administration of beeves' parathyroids produced almost instantaneous effect. The patient, however, is still an invalid as the result of the loss of the glands.

Alquier (*Arch. de Med. Exp. et D'Anat. Path.*, No. 2, p. 195, 1907) studied the anatomy and histology of parathyroids in dogs. He has found them abnormally situated under the capsule of the thyroid and even within the thyroid and calls attention to this possible source of error in supposed ablation of the glands. In 10 dogs he attempted to produce functional hypertrophy of parathyroids by removing one or more without wounding the thyroid or by unilateral thyroid-parathyroidectomy. The remaining glands were studied as late as six months afterward. There appeared to be an increase of volume as compared with those removed but the organs vary so much in size normally that opinion must be very guarded. Histologically they showed no marked change. None of them showed evidence of evolution toward thyroid structure.

Several papers deal with the histology of the glands. Getzowa (*Virchow's Archiv*, Bd. 188, p. 181, 1907) describes four types of cells shown by hematoxylin-eosin staining: 1. "wasserhelle" cells; 2. "rosarote" cells; 3. oxyphile cells; 4. syncytium-like cells. Colloid content is not constant but is frequently found. In 10 children under 10 years, none was found; in

20 persons between the ages of 15 and 80 it was absent in only three. It is found in the vesicles, between the cells, and also intracellular, Getzowa being the first to describe it in the last-named situation. In some cases this is in large masses which are connected by processes with that in the neighboring cells. She found displaced masses of parathyroid cells in 7 cases, 3 of them in the thyroid; also rests of the postbranchial body in 4. Both these are of importance in the question of struma. Among the numerous atrophic thyroid nodules in cretins was found one with the structure of the parathyroid and this she designated parathyroid struma. Forsyth (*Brit. Med. Journal*, p. 1177, May 18, 1907) from a careful study of the glands concludes: 1. The parathyroid, like other glands, presents the histologic variations of activity and rest. The so-called oxyphile cells are cells distended with granular secretion and the so-called principal cells represent the exhausted stage; intermediate forms are common. 2. The granular secretion of the cells is extruded into the surrounding lymphatic spaces and often the product of many cells runs together to form a drop. This may either lie in an irregular space between the cells or occupy a central position around which the cells are grouped to form a vesicle. In either case the secretion passes into the smaller lymphatic vessels and gradually flows along larger vessels to reach the surface, whence it drains away from the gland. 3. The secretion of the parathyroid, both in its physical characters and in its microchemic reactions, appears indistinguishable from the colloid of the thyroid. 4. During the first few months of life the parathyroid glands show few if any signs of activity. By the end of the third month at latest, colloid

secretion may be found though the infantile type may persist for some years. The histologic differences between thyroid and parathyroid he believes (*Brit. Med. Journal*, p. 1508, Nov. 23, 1907) are referable to differences in the vigor of secretion and lymphatic drainage in the two glands.

Elsewhere (*Lancet*, p. 905, Sept. 7, 1907) Forsyth says he abandoned projected operations on the parathyroids of rabbits and cats because of fallacies inherent in such procedure. There is no accurate data as to the number or position of those organs and it is difficult to identify them on the operating table. Instead of operative work he therefore made a study of the glands in man and 70 species of animals. Histologically there is usually no difficulty in distinguishing between the thyroid and parathyroid but in not a few instances the thyroid possessed in part or in whole the features of a parathyroid and intermediate stages between the two are not uncommon. Several animals possess thyroids with parathyroid characters, these facts pointing strongly toward the identity of the two organs. Directly opposed to this view regarding the relation of the two organs is the opinion of Hagenbach (*Mitteil. a. d. Grenzgeb. der Med. u. Chir.*, Bd. 18, p. 329, 1907) who studied the function of the thyroid and parathyroid in cats. He found it possible in most cases to extirpate the thyroid plus the inner parathyroid and leave the outer. When this is done the two remaining parathyroids protect the animal from tetany. They do not act vicariously for the thyroid however, as a typic cachexia thyreopriva develops. The latter produces conditions analogous to athyreosis or congenital myxedema. Later removal of the remaining parathyroids is followed by pronounced tetany. The find-

ings in athyreosis and in his experiments show, according to his view, that anatomically and embryologically, as well as functionally, the thyroid and parathyroid are separate organs.

Of great practical interest is the question regarding the effect of pathologic changes in the parathyroids or of their absence. Most widely discussed is their relation to tetany although their bearing upon other affections has been investigated. Animal experiments have been conducted by numerous observers but with such diverse and even directly opposed results (possibly largely explained by the uncertainty of operation as emphasized by Forsyth), that conclusions based on the published findings appear hazardous. One is quite safe in saying that whatever the real value of the experiments may be, they collectively point more to the parathyroid origin of tetany than to the opposite view. Pineles (*Deuts. Archiv. f. klin. Med.*, Bd. 85, p. 491, 1905) from a review of literature reached the conclusion that all forms of tetany are produced by the same so-called "tetany poison." This he showed earlier to be due to insufficiency of the parathyroids, consequently he would place all forms of tetany under this pathogenesis. Erdheim (*Mitteil. a. d. Grenzgeb. der Med. u. Chir.*, Bd. 16, p. 633, 1906) contributed a lengthy experimental study of tetany parathyreopriva. He used for this purpose white rats because they possess but two parathyroids and also because they are sufficiently small to permit afterwards of serial sections of the structures of the neck to determine if any parathyroid tissue had been left at the time of operation. In more than thirty animals extirpation of both parathyroids was followed by tetany. All animals living from 54 to 162 days showed

severe changes in their gnawing teeth which finally led to fracture beneath or outside of the alveolar process. Erdheim describes three cases of tetany in human beings as a result of strumectomy. He concludes that tetany during pregnancy is in relation to the parathyroids; it is a hypoparathyroidismus. He also studied human parathyroids in many other disease forms. In 3 cases of gastric tetany, one of brain tumor, 2 of traumatic tetanus, and 2 of 3 cases of paralysis agitans, they were normal. In the third case of the last-named affection one gland was increased in size and showed an abnormal number of oxyphile cells. In 2 cases of infantile tetany the glands showed old hemorrhages (see reference to the studies of Yanase in this review) and hyperemia. In one case of status epilepticus they were normal, in one they showed increase of connective tissue. In 4 cases of eclampsia they were hyperemic.

Caro (*Mitteil. a. d. Grenzgeb. der Med. u. Chir.*, Bd. 17, p. 447, 1907) reviews the papers of Pineles and Erdheim and asserts that their conclusions as to the parathyroid nature of tetany were unwarranted. His experiments with resection of the thyroid led him to regard that organ as at fault in tetany. At least a part of his experiments however are open to serious objection because he resected the thyroid without attention as to whether or not the parathyroids were removed at the same time. Pepere (*Le Ghiandole Paratiroides*. p. 326. Turin, 1906) concludes that we should be very reserved as to the hypothesis of the parathyroid origin of tetany and also of eclampsia. In the glands from 8 cases of the former he found the chromophile cells few in number and the other cells considerably degenerated. In 8 cases of the latter

affection, 4 showed congenital anomalies in the shape of reduction in number of the glands; in 4 they were normal or above the usual. Histologically 4 cases showed no changes not found in non-eclamptic pregnant women. In 3 cases the glands appeared poor in chromaffin cells, that is like those in infants or young subjects. In one case there was increase in endo-cellular fat in all the cells, even the chromaffin cells which ordinarily do not contain fat. The lesions shown by the glands under various circumstances include, 1. Fatty degeneration of the cells; 2. deposit of amyloid around the capillaries and compromising the cells; 3. colloid degeneration (to be distinguished from hypersecretion of colloid); 4. sclerosis. In general the parathyroids are very sensitive to infections, both spontaneous and experimental. The consequent changes appear to be without relation to the nature or severity of the infection. In a case of facial erysipelas Pepere found a veritable suppurative thyroiditis. He found in none of his studies evidence of hyperfunction. Frommer (*Monats. f. Geburtshülfe u. Gynäk.*, Bd. 24, p. 748, 1906) from experiments on dogs and rabbits by removal of parathyroids and implantation of placental tissue, concludes that the parathyroid glands possess an antitoxic function whose cessation is followed by tetany; pregnancy and labor exert upon this an essential influence. Partial parathyroidectomy causes in rabbits no special disturbance; total can lead to death. Complete parathyroid and thyroidectomy can produce a fatal tetany.

Segale (*quoted in Centralb. f. allg. Path. u. Path. Anat.*, Bd. 18, p. 535, 1907) studied the effects of ablation of thyroid and parathyroid. He believes the cachexia strumipriva acuta is due entirely to removal of

parathyroids. The symptom-complex is the same whether one removes the parathyroids alone or the thyroids and parathyroids together. Vincent and Jolly (*Jour. of Physiology, Vol. 34, p. 295, 1906*) report further experiments on monkeys, cats, dogs, wolves, badgers, and rats which confirm their conclusions reached in 1904. They record their views as follows: "Neither thyroid nor parathyroids can be considered as organs absolutely essential to life. Rats and guinea pigs do not seem to suffer at all as the result of extirpation. Monkeys show only transient nervous symptoms. Dogs, cats, foxes, and prairie wolves frequently suffer severely and die. Badgers do not appear to be affected by the operation. When parathyroidectomy proves fatal this is probably due to the severe damage simultaneously done to the thyroid. Thyroid and parathyroid are to be looked upon as a single physiologic apparatus, the two kinds of tissue being intimately associated embryologically and working together physiologically. When the thyroid is removed, the parathyroids appear capable of functionally replacing it to a certain extent and their histological structure changes accordingly. In our former paper will be found sketches showing the changes from parathyroid to thyroid. In no animal, not even in monkeys, have we been able to induce any swelling of the subcutaneous tissue which is the most striking feature of myxedema in the human subject. We think therefore that the pathology of myxedema must be more complex than simple thyroid insufficiency." Forsyth (*Brit. Med. Journal, p. 141, Jan. 19, 1907*) reported a case of fatal myxedema in a woman of 58. The thyroid was sclerotic and all the 6 parathyroids showed departures from the normal structure.

These included a marked tendency for their cells to form vesicles lined by cubical epithelium, an exceptionally profuse secretion of colloid which filled the follicles and lay among the masses of cells and distended the lymphatic channels, an abnormal increase in the connective tissue which formed coarse trabeculae and penetrated between the cells, and finally a thickening of the tunics of the arterial walls. The two changes first described represented excessive activity of the glands and an attempt to supply the deficiency of colloid caused by atrophy of the thyroid, while the changes in stroma and arteries were probably pathologic, being allied to the fibroid changes in the thyroid. This is said to be the first case of myxedema in which the parathyroids have been described. In the discussion of Forsyth's paper, Dr. Harnett said that from the study of many parathyroids he agreed that the presence of colloid indicates undue activity.

Chvostek (*Wien. klin. Woch., No. 17, p. 487, and No. 21, p. 625, 1907*) says that functional disease of the parathyroids is the most plausible explanation of tetany. He regards mechanical hypersusceptibility of nerves first the facial, as an easily demonstrable and essential symptom of disease of the parathyroids, a fine test which shows functional disturbance of those bodies. The appearance of the facial phenomenon in cases of pulmonary tuberculosis can be explained by the view that tuberculous lesions are in the apex and thus affect the parathyroids. The separation of cases of tetany into laborer's tetany, tetany due to infections and intoxications, to pregnancy, and to goitre, cannot be made. For all can only one cause be considered, functional disturbance of the parathyroids. Chvostek's view is supported by the case of

Stumme (*Deuts. Zeits. f. Chir. Bd. 90, p. 265, 1907*) in which a distinct facialis phenomenon was benefited by the removal of a tuberculous parathyroid during thyroidectomy on account of Basedow's disease. At least this was the clinical course and the parathyroid was tuberculous. Kocher (*Verhandl. d. Cong. f. Inn. Med., No. 23, 1906*), in a lengthy report on the pathology of the thyroid gland, states that the parathyroids as the originating point of tetany in animals has through a number of observations been shown to be the most probable also for man. It is entirely certain however that the cause of myxedema and Basedow's disease lies in lesions of the thyroid instead of the parathyroids. Doyon (*Jour. de Phys. et de Path. g n rale, T. 9 No. 3, p. 457, 1907*) describes experiments upon the parathyroids of turtles. In this animal the glands are easily destroyed and this leads to paralysis and death. Destruction of one of the two is without effect. Ungermann (*Virchow's Archiv, Bd. 187, p. 58, 1907*) reports the case of a thyroid the size of a chestnut at the root of the tongue of a man of 30. There was no normal thyroid except a pea-sized nodule of thyroid tissue in the region normally occupied by the left lobe. The parathyroids were normal. Ungermann regards the case as supporting the view that no functional connection exists between the thyroid and parathyroids. Loewenthal and Wiebrecht (*Medizin Klinik, No. 34, p. 1012, 1907*) reports 3 cases of tetany treated by the administration of parathyroid, with good results in two of them. One was a case of Basedow's disease with tetany and parathyroid proved much more efficacious than did any thyroid preparation. In the second, parathyroid controlled (prevented) attacks of tetany in a patient in whom the

affection developed after operation for exophthalmic goitre. They employed both fresh glands and tablets, the former being about 10 times more active than the latter.

Guizzetti (*Centralbl. f. allg. Path u. Path. Anat., Bd. 18, p. 81, 1907*) reports the findings in 4 cases of traumatic tetans among the 60 cases in which the parathyroids were studied. The most noteworthy changes were inflammatory centers in the shape of dense infiltration by mononuclear cells in the parathyroids of 2 cases in which the disease had lasted for 4 and 7 days respectively. Guizzetti says we must have more observations and animal experiments before we speak of the parathyroid changes in tetanus. His findings apparently indicate that progressive changes occur with the duration of the case.

One of the most valuable studies of the year, and withal one of the most convincing as regards the parathyroid origin of tetany, is that contributed by Yanase (*Wien. klin. Wochen., No. 39, p. 1157, 1907*). He examined the parathyroids in 89 children showing tetanoid conditions, particularly galvanic changes in the peripheral nerves, or spasmophilia. Hemorrhages in the parathyroids were found in 33 cases, 37%. Yanase asserts that the hemorrhages are acquired mainly in postfetal life, perhaps as with pleural and pericardial ecchymoses, at the time of birth. Hemorrhages in these glands can be demonstrated with certainty only during the first year of life; after this the possibility progressively becomes smaller and after the fifth year one cannot say from histologic study that hemorrhage had ever occurred. (Late hemorrhage, in older children or adults, seldom occurs.) Yanase divides the 50 cases in which the electrical reaction was determined into four groups:—1. Normal galvanic reaction, 13

cases. In 12 there were 4 each, in one 3 parathyroids. Hemorrhage was found in none. Group 2.—Anodal irregularity, 22 cases; hemorrhage in 12 or 54%. In the 10 other cases the age must be considered. Of the 22, 9 were in the first year of life and all showed hemorrhages; 13 were above one year and hemorrhage was found sparingly in 3 and was absent in 10. Therefore all 10 of the negative cases were of such age that signs of hemorrhage could have disappeared. Group 3.—Kathodal irregularity, 13 cases. Hemorrhage was found in 8, or 61%. The other five were all over one year. Group 4.—Two cases, one of tetany with meningitis in a child of $2\frac{1}{2}$ years, and one of muscle cramp in a child of three months. Hemorrhage was found in both. Eleven (10 under one year) of 39 cases in which the electrical reaction was not taken showed hemorrhage. Certainly it was not accidental that all cases with normal reactions had normal parathyroids and that all cases with hemorrhage that were tested electrically showed abnormal reactions or clinically forms of spasm. Yanase concludes that between parathyroid hemorrhage and tetany there is doubtless a connection. The question is, what is this connection? His explanation is as follows: It has been proved experimentally that the parathyroids are poison-destroying organs whose principal function most probably is to neutralize metabolic poisons which are detrimental to the nervous system. Therefore we must recognize in metabolism the origin of the so-called tetany poison, in the nerves the principal tissue attacked by it, and in the parathyroids the organ that neutralizes this poison. The total loss of parathyroids causes in man and animals tetany of which the clinical picture is essentially like that of other forms of tetany. Hemorrhage in the

parathyroids does not totally destroy but only partly damages the glands, hence it is not the actual cause or alone the cause of tetany but it can so act as finally to produce that affection. The poison increases because the parathyroids damaged by hemorrhage no longer exert their usual function. Only in this way can be explained how parathyroid hemorrhage early in post-fetal life leads in many cases to tetany much later in the life of the affected individual.

Escherich (*Münch. Med. Wochen.*, No. 42, p. 2073, 1907), under whom Yanase made his studies, says the findings detailed by the latter bring the parathyroid theory of tetany very nearly to a probability. It explains in a very positive manner the enormous frequency of tetany in the earliest period of life. He states that anatomic changes in the parathyroids need not be demonstrated as a substratum for the acceptance of parathyroid insufficiency in young children. There may be a functional deficiency of the glands without histologic changes, a congenital hypoplasia, particularly to be thought of in the hereditary and chronic cases of tetany. This affection, especially during the first year of life shows a striking coincidence with the symptoms of beginning rachitis. This in connection with Erdheim's findings of changes in the teeth of parathyroidectomized rats indicates the possibility of a close pathogenetic relation between tetany and rachitis.

It is but natural that the growing evidence of implication of the parathyroids in cases of tetany, particularly those following operations upon the thyroid, should lead to attempts at transplanting those organs in some of the tissues of the body. If this could be successfully accomplished, the restoration of parathyroids unavoidably or inadvertently removed during goitre opera-

tions might prevent such cases as that so graphically described by Halsted. He has transplanted parathyroid tissue into the spleen or thyroid gland of 17 dogs and discusses the technic thereof; the results will be announced later. Pfeiffer and Mayer (*Wien. klin. Wochen.*, No. 23, p. 699, 1907) found that dogs are better than rats for transplantation experiments because the outer parathyroids are separated from the thyroid and the inner are sunk in that organ. Dogs also manifest tetany more acutely. These experimenters transplanted one outer gland to the abdominal wall between the muscle and peritoneum and extirpated the part of the thyroid containing the inner one. After a week the same procedure was carried out on the opposite side. In neither of the two dogs upon which this was employed have signs of tetany developed. Leischner (*Wien. klin. Wochen.*, No. 21, p. 645, 1907) reported animal experiments indicating that parathyroids can be transplanted and maintain their function. He operated upon rats, placing the gland between the peritoneum and rectus abdominis or in that muscle. In 4 rats both glands, with an interval of 10 days to a month, were transplanted with no signs of tetany. When 3 to 6 weeks later the portion of the wall containing the bodies was extirpated, tetany appeared. In 4 rats both parathyroids were transplanted at the same time; on the following day tetanic symptoms appeared as in cases of entire removal of the glands but these afterward ceased. In 3 or 4 weeks removal of the wall containing the parathyroids brought on a new attack of tetany. Leischner states that the practical point for surgeons is that when in difficult goitre operations the parathyroids are not left, the removed thyroid should immediately be ex-

amined for those bodies which, when found, should at once be reimplanted. Von Eiselsberg, in discussing Leischner's paper, said that of 449 cases of goitre upon which he had operated, alarming tetany developed in only 2; in 14 others there were some slight symptoms. He then mentioned a case, not yet ready for complete publication, in which a parathyroid was transplanted in a human subject. The patient was a woman of 42 who for many years had suffered from a fairly severe tetany which followed total thyroid extirpation. She had many times been in the clinic during goitre operations and at last a favorable case was operated upon and a gland was transplanted; this was apparently followed by results. Von Eiselsberg believes that removal of a parathyroid for this purpose is permissible only when a cyst is taken out of one lobe of the thyroid and the remainder of the organ appears normal so one can say with some certainty that 3 parathyroids are left intact. In this case the woman from whom the parathyroid was removed showed no symptoms of tetany and left the clinic entirely well.

Thompson (*Amer. Jour. of the Med. Sciences*, Vol. 134, p. 562, 1907) reports a careful study of the parathyroids in 12 cases of infantile atrophy, controlled by investigation of the glands in 12 other children of the same age, namely from birth to one year. The changes found in the first series were degenerative and sclerotic. The former progressed in some instances to complete loss of cell structure with fusing of the cytoplasm into a mass in which the nuclei were irregularly placed. The most common finding however was a pronounced increase in the connective tissue stroma, corresponding closely to chronic fibrous parathyroiditis in the adult. These changes

are similar to those in the thymus gland which are constant in infantile atrophy. Such changes are present also in other ductless glands as Thompson found in the thyroid and medullary suprarenal in these cases. He does not assert that the parathyroid and other ductless glands are primarily at fault in infantile atrophy but emphasizes the point that the changes due to mal-assimilation in this affection are more than wasting of fat and muscle. As to tetany parathyreopriva, which might possibly be expected by some to occur in these cases but is never present, Thompson says it is not by any means entirely proven that the destruction of the parathyroids in the human being always lead to tetany.

Various lesions of the parathyroids are reported by Verebely (*Virchow's Archiv*, Bd. 187, p. 80, 1907). He found two instances of tuberculosis of those glands, both in cases of chronic diffuse tuberculosis. He also describes 3 cases of cyst, 3 of hemorrhage and one of tumor.

Schirmer, in the review already mentioned, cites 12 cases of tumor of the parathyroid, reported by DeSanti, Benjamins, MacCallum, Askanazy, Hulst, Weichselbaum, Erdheim, and Verebely. In none was there tetany or myasthenia. Likewise in a case of Königstein, with thyroid metastases from a bronchial carcinoma and implication of 3 of the 4 parathyroids there were no symptoms of tetany. Petit, cited by Alquier, reported finding a parathyroid cancer in a horse; this tumor gave multiple metastases.

Rupture of Urinary Bladder.—In ruptures of the bladder the lower part of the abdomen will show distinctly increasing areas of dulness. This sign I have found to be of great value in the diagnosis of the two cases of extra-peritoneal rupture in which I operated.—D. N. Eisendrath.

CORRESPONDENCE.

BY

F. C. CLARK, M. D.,
Providence, R. I.

To the Editor of American Medicine:

One of your correspondents in the last number of *American Medicine*, has gathered some statements in regard to ancient medicine which require some qualification.

First in respect to circumcision. This is a particularly interesting subject and has never been investigated as it deserves. Many years ago I investigated the subject as far as my limited number of authorities allowed, and will give you as briefly as I am able the results of my researches.

The practice of circumcision was undoubtedly a sanitary measure, a matter of cleanliness followed by most nations living in warm countries. But it would not be surprising if the practice was found instead, to be due to religious as well as to sanitary reasons, as we might suppose from the fact that the modern Jews observe it in the former light. All health laws were sacerdotal in their origin.

The oldest country to which the custom of circumcision can be traced is Egypt, the teacher of the world. Other nations, according to Herodotus circumcised as well as the Egyptians, among whom were the Ethiopians, and Colchians; and these from the earliest known times. From the Egyptians the Syrians of Palestine learned the practice. The Syrians here refer to the Jews. But in all cases the Egyptians were the first teachers of it. (Herod. Vol. II. cap. 37. 104; also Josephus, Against Apion, 1.22, who confirms the statement of Herodotus.)

Internal evidence would show, therefore, that Abraham instead of originating the institution of circumcision, must have known already of its existence in Egypt when he sojourned, that is went into the land of the Chaldeans; and it is not reasonable to suppose that he did not adopt some of their customs. Nations diametrically distinct from the Jews, as the Phoenicians, also circumcised. Hence, conceding to those who would make the Jewish rite a national institution, how do

they explain its existence among the Phoenicians and Egyptians themselves? Abraham may have been the first Hebrew who practiced this rite among that people.

As to the first instrument employed in performing the rite of circumcision, we must consider whether the practice originated in the stone- or the iron-age. The North American Indians not possessing any iron implements used stone hatchets, knives, etc. They scalped their enemies either with reeds or a sharp-edged shell. But we have no knowledge, traditional or otherwise, that the Egyptians as known to us ever passed through the stone-age; they were a highly civilized people as far back as history and tradition go. Perhaps your young correspondent in referring to the custom of using a sharp stone in circumcision, has reference to the circumcision of Moses' son. Moses, as the account reads (Exodus, IV. 23-26) seems for some reason or other to have delayed the circumcision of his son, whereat the Lord waxed angry and threatened to kill the son and was in the act of doing so when Zipporah, the wife of Moses, "took a sharp stone and cut off the foreskin of her son and cast it at his feet and said, 'Surely a bloody husband art thou to me.' " Either the Jews in the time of Moses were passing through a stone-age or steel, or iron knife was not then at hand. But iron was known to the writer of Genesis at least. Hence the use of the sharp stone in the above instance was an exceptional case. If your correspondent will be kind enough to give his authority for the manner in which Abraham was circumcised, the present writer will be very much obliged to him. Neither the scriptures nor Josephus give the form and nature of the implement employed. (Joseph. Bk. I. X, 5; Gen. XVII, 26).

Your correspondent would imply that Soranus was the first to dissect a human body in the first century of our era. He forgets the famous School of Alexandria. This school was the only institution in antiquity where the dissection of human corpses was permitted by law. Herophilus and Erastratus, two famous surgeons, founders of certain schools of medicine, flourished during the third century before the Christian era at Alexandria. Here anatomy was taught and nowhere else. The

anatomical school here was celebrated throughout antiquity. The study of medicine was particularly encouraged by the first Ptolemies. Dissection of living criminals was, according to some authorities, also allowed. But dissection was not long followed. The authorities of the West did not encourage it; and down to the early part of the nineteenth century, there were many ways adopted to secure bodies for dissection. The so-called "Resurrectionists" supplied this demand as late as the time of Sir Astley Cooper. Even this great surgeon was obliged to dissect in a manner to escape the lynx eyed superstition of an ignorant populace. (Sprengel, His. of Med. Ger. or French Ed.; Renouard, His. de la Med.).

Dry Mouth.—For dryness of the buccal mucous membrane such as occurs in various febrile or other long illnesses, glycerine and water, in the proportion of one of the former to five of the latter, is very effective. A little lemon juice makes the mixture more palatable. Another useful preparation in similar circumstances is linseed tea with a little glycerine. (*The Hospital.*)

The Dangers of Anesthesia¹.—Bryant says that the dangers and the responsibilities of anesthesia should be regarded as correlative, and the realization of the presence of a danger should promptly suggest the means of relief. It is in instances of this kind that trained and experienced attention under any executive equipment, lightens the burden of responsibility and correspondingly contributes to operative satisfaction and lessens the weight of unfavorable outcome. The anticipation in anesthesia of an awkward complication or of a significant consequence bids, on the one hand, a complete preparation therefor, or perhaps on the other, warns against exposure to prospective danger. It naturally follows, therefore, that those who administer anesthetic should be, as far as practicable, fully conversant with the present and prospective demands of rational anesthesia in all instances. The physiology of anesthesia and the therapeutics of its ill effects should be well understood.

¹ J. D. Bryant, Med. Record, Dec. 28, 1907.

ETIOLOGY AND DIAGNOSIS.

Body Lice in the Transmission of Relapsing Fever¹.—Mackie describes an epidemic in which the pediculous corporis appeared to play a causative factor. The features of this epidemic are thus summarized: (1) An epidemic of relapsing fever broke out in a mixed settlement of boys and girls living under similar conditions. (2) A very high percentage of the boys fell victims to the disease in the course of a few weeks. (3) A much smaller percentage of girls fell ill and at infrequent intervals extending over three months. (4) The most notable factor in which the boys differed from the girls was that they were infested with body lice, from which parasite the girls were almost free. (5) A well-marked percentage of the lice taken from the infected ward contained living and multiplying spirilla. (6) The stomach of the louse was the chief seat of multiplication, and this was carried on in the face of active digestion and after the disappearance of all other cellular elements. Other organs became secondarily infected. The secretion expressed from the mouth of infected lice contained numbers of living spirilla, and they also existed in greater or less numbers in the upper alimentary tract. The ovary was frequently infected, but spirilla were not found in deposited ova. (7) With the increase of the epidemic amongst the girls, body lice became more in evidence. (8) With the subsidence of the epidemic amongst the boys, the percentage of infected lice fell. (9) An attempt to infect a monkey by means of lice failed.

Empyema of the Thorax².—According to *The Hospital* it is of great importance to diagnose empyema early because immediate surgical treatment is indicated. It is an unfortunate fact, but a true one, that many cases of empyema are not even suspected, far less diagnosed, as early as they should be, even in the wards of a hospital where the patient is under continual observation, and any change in his

condition is noted from day to day. As a general rule it may be said that any patient convalescing from lobar pneumonia should be carefully watched on the chance of his developing an empyema, even when he is apparently quite convalescent. The onset of a rigor, with a rise of temperature, should put one on one's guard; and should these occur the chest should at once be examined for the physical signs of a pleural effusion. The details of such an examination do not of course, lie strictly within the province of the surgeon; but there are certain gross signs with which he should be familiar. They are (1) displacement of the apex-beat of the heart; if the empyema is left-sided the apex is displaced towards the middle line, while if it is right-sided the apex is displaced in a typical case right out towards the mid-axillary line; (2) the presence of a small or large area of the thoracic wall which is dull on percussion; (3) breath sounds are absent over the dull area, but ægophony is a fairly constant phenomenon; (5) at the upper limit of the dull area there may be tubular breathing. If the empyema has existed for some time before its presence is discovered there may be œdema of the chest wall, and the patient may present an emaciated appearance, with a hectic flush.

The presence of these signs is quite sufficient evidence to show that there is some free fluid in the pleural cavity.

Microscopic Examinations for Gonococci¹.

—In a very interesting series of papers on *The Treatment of Genito-Urinary Diseases* Wolbarst says that the technic of mounting and staining urethral discharges suspected of harboring gonococci is worthy of some attention in view of the careless and unscientific methods that are often employed in practice. The primary requirement in any case is that the discharge be spread over the glass slide as thinly as possible, so that not more than one layer of cells will be seen on examination. With such a specimen the individual cells can be seen, and their relation to each other and to such germs as may be present studied.

¹ J. P. Mackie, *Brit. Med. Jour.*, Dec. 14, 1907.

² Dec. 28, 1907.

¹ A. L. Wolbarst, *International Jour. of Surgery*, Dec., 1907.

When the discharge is smeared on thick, the value of the smear for diagnostic purposes is minimized in direct proportion to the thickness of the layers of cells. In chronic gonorrhea, in the absence of a discharge, the urine must sometimes be examined. Whether or not it is preceded by massage of the prostate and vesicles, it should be thoroughly centrifuged and the sediment thinly spread over the slide. Passing the slide over a flame a few times fixes the specimen, and it is ready for staining. In passing, emphasis should be placed on the fact that failure to find gonococci in any given specimen is not necessarily to be construed as indicating an absence of gonococci in the urine or discharge. When a discharge is present, the glans and meatus are to be cleaned, a sterilized platinum loop is inserted into the fossa navicularis, and the drop transferred to a clean glass slide. The drop is now thinly spread over the glass before it is allowed to dry by passing the flat edge of a cover glass or another slide over it several times to and fro. The specimen is then fixed in the flame and is now ready for staining.

In an undoubted clinical case of gonorrhea, where rapid work is desired, the simplest method is to apply a few drops of a dilute solution of methylen blue for a minute or two, wash off in running water, dry and examine with the 1-12 immersion lens. When the classic symptoms of acute gonorrhea are present, the diplococci observed by this simple method may with a reasonable degree of certainty be accepted as the causative factor of the inflammation. But in doubtful cases the Gram method must be used.

Gram's Method.—This method has a selective decolorizing effect on the gonococci, and for ordinary purposes, in the absence of a culture, may be accepted as diagnostic. A solution of anilin gentian violet or methylen blue is applied to the fixed specimen for one minute, and washed in water; it may now be examined. The gonococci will appear blue or purple. The specimen is next covered with Gram solution (iodin one part, potassium iodide two parts, water 100 parts) until it turns dark brown; decolorize with 95 per cent. alcohol, wash off excess of alcohol, dry and examine. The gonococci will now be decolorized, but other

bacteria will appear blue, cellular tissues rosecolored or yellow, nuclei and cell granules blue. The counter stain—*e. g.*, Bismarck brown—is now applied for ten seconds; this stains the gonococci a rich brown, while all other bacteria retain their purplish blue color. Other staining methods have been devised, but the Gram is the simplest and most reliable.

A New Symptom of Appendicitis¹.—T. Rovsing states he has found that pressure on the corresponding point on the left side will elicit the typical pain at McBurney's point in case of appendicitis, but not with other abdominal affections. Testing this indirect means of eliciting the pain at McBurney's point on more than 100 patients during the two years since has confirmed its differential value; it was never found unless there was some affection of the cecum or appendix.

Cholecystitis.—T. E. Potter in *The Medical Fortnightly* says that the most prominent symptom of cholecystitis is tenderness immediately under the ninth intercostal cartilage, a sign of as great diagnostic importance as tenderness over McBurney's point is in appendicitis. •

Shock and Internal Hemorrhage.—*The International Journal of Surgery* says it is not always easy to distinguish pure shock from concealed or internal hemorrhage. In the latter there are apt to be recurrent attacks of syncope, which do not take place in the former. In pure shock the hemoglobin is unchanged, while in hemorrhage it is greatly reduced. But it is well to remember that both conditions are very apt to take place in the same patient.

Malignant Diseases of the Lung.—Butler says there may be at first simply the evidence of a bronchitis. Ultimately there is cough, with the so called prune juice or currant jelly, rarely grass green, sputum, due to an admixture of blood or altered blood pigment; pain, depending largely on the degree to which the pleura is involved; and dyspnea, which may be paroxysmal and caused by pressure on the trachea. The breath and sputum may be offensive because of putrefactive infection of necrotic areas (gangrene).

¹ T. Rovsing, *Centralblatt f. Chir.*, Oct. 26, 1907.

TREATMENT.

The Treatment of Urinary Infections in Young Children¹.—Abt says as a prophylactic measure nurses and mothers and all who are entrusted with the care of young children should be told of the importance of careful cleaning of the buttocks and the region of the genitalia. (It is possible to conceive how feces which for a considerable time are in contact with the vulva may cause an infection of the bladder.) The treatment depends on the particular cause of the disorder. If a stone or a foreign body is the causal factor of the cystitis it is evident that surgical intervention is indicated. If, on the other hand, the condition is due to an infection, particularly with the colon bacillus, the treatment should consist in the abundant administration of fluids especially of water.

The excessively high temperature should be treated hydrotherapeutically. The infant may sometimes be quieted by the application of an ice-bag to the head or cool compresses to the body. Medicinally urotropin (hexamethylenamin) is by far the most valuable remedy; this may be given in one grain doses, four times daily, to infants from 1 to 2 years of age. If the drug is well borne the dose may be gradually increased.

In a note which I have published elsewhere I have shown that urotropin acts very favorably in these cases, although it may cause renal and vesical irritation. In normal children its continuous use is capable of causing urine to reduce Fehling's and Haines' solution, thus simulating the sugar reaction obtained in cases of glycosuria or diabètes.

Salol may be given either alone or in combination with urotropin. Children from 1 to 2 years of age may be given one grain of salol four or five times daily. In one of my cases, to which I have already referred as an undoubted illustration of cystopyelitis, I used for a long time both urotropin and salol without bringing about complete recovery. I finally tried one drop doses of pure guaiacol in orange juice three times daily. This seemed to have a favorable effect on the disease. It may also

be said in passing that pure guaiacol has been recommended in cases of tuberculous cystitis and pyelitis. Comby reports a case of cholecystitis treated with two injections of colon bacillus serum. He also irrigated the bladder with a from 3 to 10 per cent. protargol solution. Kastner suggests citrate of potash in the treatment. Holt makes a similar recommendation.

During the febrile stage the nourishment should be largely liquid; it should be non-irritating, and should be diluted so as to meet the digestive ability of the infant.

It has been variously advised to irrigate the bladder with boric solutions, protargol, argyrol, etc. Originally Escherich advised the use of lysol irrigations in his cases; this plan of treatment is not called for and is likely to do more harm than good. The ordinary urinary antiseptics in one form or another, used internally, will usually bring about the desired result. In the severe forms of streptococcus or staphylococcus infection vesical irrigation may be indicated. In other respects the treatment is purely expectant and symptomatic. The pain and restlessness may require the use of antispasmodics and sedatives.

The Treatment of Dysentery¹.—Sandwith divides dysentery into two forms, the bacillary and the amebic. In treating the first the bowel should be cleaned out with castor oil or magnesia. Rest in bed should follow, with warm clothing, perhaps a hot-water bottle, and certainly a pad of cotton wool on the abdomen surrounded by a flannel bandage. Physiological rest for the intestines, so far as possible, must be obtained by stopping all solid food and giving only small quantities of liquid every two or three hours. When the tongue is fairly clean boiled or sterilized milk, pure or diluted with rice water, or peptonized, is the best food. The daily examination of stools, as in enteric fever, will tell you whether we are giving too much milk or whether it is necessary to peptonize it. When the tongue is thickly coated or the patient loathes milk, we may have to give chicken broth, albumin water, whey or rice

¹ I. A. Abt, Jour. A. M. A., Dec. 14, 1907.

¹ F. M. Sandwith, London Lancet, Dec. 7, 1907.

water for a day or two. Alcohol will not help the dysentery and is bad for the liver, so should be withheld unless the heart requires it; brandy in such circumstances is the best stimulant. All food should be given tepid, neither hot nor cold, and even then a small judicious meal may cause immediate peristalsis and an action of the bowels. We must treat dysentery just as carefully as we would enteric fever if we wish to cure the patient. The author has hearty commendation for the serum treatment. In the amebic variety of the disease the same general régime is followed as above outlined. We may give bismuth by the mouth, with tannigen or some astringent added. Many still rely on ipecac in combination with opium. Calomel is not indicated. Sulphate of magnesia may be given alone or combined with sulphate of Soda. Rectal irrigations are of great value and should be begun early. Quinine may be used, 1-500 or 1-1000. Silver nitrate, 1-1000, or copper sulphate in the same strength.

Successful Methods for Aborting an Attack of Migraine¹.

—The importance of the toxic element in the immediate bringing on of an attack of migraine is well illustrated by the best methods for aborting the beginning of the attack. Thorough lavage of the stomach according to Coggeshall and MacCoy followed by the administration of salicylate of soda or aspirin combined with a good dose of caffein, or, still better, given in strong black coffee, has proved of more service in their hands than any other treatment when the attack first begins. Another resource when the pain is principally frontal is spraying the nose with a very strong, say 20 per cent solution of cocaine. The character of the drug should be hidden from the patient. When called to a case in the midst of a violent attack of any kind of headache, which is well under way, the authors do not hesitate, if they are fairly well satisfied that it is due to an ultimately removable cause, to administer a hypodermic injection of morphin with atropin and to re-

peat it if necessary until the patient is comfortable. In a severe headache, which has already lasted for a couple of hours, they are convinced that even where there are no particular gastric symptoms the stomach is in such a condition with the majority of patients that any drug put into it is simply wasted as far as relief is concerned and many of the unpleasant results of using the coal tar products have been due to the administration of repeated doses under these circumstances, where no relief was obtained until the headache began to go off of itself and then all the successive doses were apparently absorbed about the same time. Where one does decide to make use of the coal tar analgesics, antipyrin has seemed to us much the safest and as efficient as any other. It is always guarded with caffein, and the same effect will be obtained from a much smaller dose if the drug is administered in an effervescing form. The hard compressed tablets, so commonly in use, dissolve with greater difficulty than many realize, and a powder is much preferable where an effervescing salt can not be used.

Preliminary and After Treatment of Laparotomy Patients¹.

—Hippel is opposed to much purging of patients before abdominal operations as this evacuation of the intestines not infrequently leads to postoperative paralysis of the bowel. He has given for some time (in sixty cases) subcutaneous injections of physostigmin after operation to stimulate peristalsis, and the results have been uniformly satisfactory. His experience confirms that of Vogel in regard to the efficacy of this measure, but his technic is somewhat different. Immediately after the operation he injects 1 mg. (1-64 gr.) of physostigmin and repeats the injection every three hours until movements are felt in the intestines which the patient is instructed to anticipate. An intestinal tube is then introduced and left for an hour. Gases escape through the tube during the day and stool follows a glycerin enema the next day. From two to four injections of the physostigmin are generally necessary;

¹ Frederick Coggeshall, M. D., and Wm. E. MacCoy, M. D., Boston, Jour. A. M. A., Jan. 4, 1908

¹ R. V. Hippel, Centralblatt f. Chir., Nov. 16, 1907.

he never noted any inconveniences from them. By thus stimulating early peristalsis the formation of adhesions is prevented and also the danger of rupture of the suture from distension of the abdomen by gases. The dangerous pushing up of the diaphragm is also averted. Still another advantage is the possibility of feeding the patient amply from the start, thus avoiding debility and hastening the healing process.

The Treatment of Epithelioma with Roentgen Rays¹.—Schiff concludes as follows: 1. The favorable effect of Roentgen rays on epithelioma is indisputable. 2. The treatment with Roentgen rays must not, however, be considered in a category by itself; it must rather be looked on as an alternative or as an addition to treatment by other methods. 3. There are obviously biologic differences in the various kinds of epithelioma which have so far not yet been sufficiently explained pathologically and anatomically and on which the success of the Roentgen treatment is dependent. 4. To aid the effect produced by the Roentgen treatment small operations may be done and the cautery applied according to the nature of the case. 5. In those cases in which no favorable influence is produced by the Roentgen rays, at the latest after the fourth or fifth sitting, this treatment must be discontinued, as little more is to be expected from it. 6. The intervals between the single sittings must not be too long; a more active Roentgen light—medium soft tube—with, of course, a careful covering of the healthy parts of the skin, is to be recommended. 7. In surgical operations a subsequent application of rays is eventually desirable. 8. It is of an especial importance to lay stress on the fact that by the application of Roentgen rays the patient is saved from an operation, and the result produced by the Roentgen treatment is not only equally good as regards the cure, but much better as regards the subsequent appearance.

Renal Tuberculosis.—There are three special symptoms that should always lead a physician to suspect the presence of renal tuberculosis. These are hematuria, pyuria, and painful urination.

DIETETICS AND HYGIENE.

Diet in Acute Rheumatic Fever¹.—In his able paper Solis-Cohen points out that an important feature of prophylaxis is the regulation of diet. The food should be simple and nutritious and should be so chosen as to yield a minimum of nitrogenous waste. In addition, the carbohydrates should be cut down to the lowest point consistent with the maintenance of nutrition, and oil and fats substituted, so far as possible. This is not only to avoid fermentative processes in the gastroenteric tract and their undesirable consequences on the body fluids in general, but also because patients of the rheumatic diathesis exhibit a distinct failure in carbohydrate metabolism. While thus restricting the diet, it is a mistake, however, to be too rigid. Red meat should be allowed once daily, an occasional baked potato is to be advised, and well-cooked rice is to be permitted at any time. In general, milk and milk products, cereals, fruits, nuts and green vegetables should form the principal portion of the diet. Pork, veal, crab, lobster and other crustaceans, hashes and messes of all kinds are to be avoided, as are likewise pickles, sweets and pastry. As in all other matters, however, the diet is to be individualized; with an extra restriction here and a greater liberty there. Water should be taken freely. In the ordinary case mineral waters have no advantage over pure, clear hydrogen monoxid, but in cases with persistent pain and stiffness mild alkaline waters—for the obese, sulphur waters, and for the anemic, aged and feeble, alkaline chalybeate waters—are useful.

The Uses and Contra-Indications of Water Internally.—The conditions in which the intake of water should be restricted according to a writer in the *Texas State Journal of Medicine* are:

In poor gastric digestion or in insufficiency of the gastric juice.

In dilatation or in motor insufficiency of the stomach.

In acute watery discharges.

In anemia.

In arteriosclerosis.

¹ E. Schiff, London Lancet, Nov. 23, 1907.

¹ S. Solis-Cohen, Jour. A. M. A., Dec. 21, 1907.

In aneurism.

When there has recently been internal hemorrhage.

In cardiac insufficiency, i. e., weakness of the heart muscle, whether there is valvular disease or not.

When there is edema from any cause.

When there is fluid extravasation, as in pleurisy, pericarditis with effusion, or in ascites.

When there is either acute or chronic inflammation of the kidneys.

The conditions in which the water intake should be increased are:

In hyperacidity of the stomach.

In constipation.

In congestions of, and sluggishness of, the liver, when this is not due to organic disease.

When there is jaundice.

When there is a tendency to the deposition of gallstones or to the formation of renal calculi.

When there is acute or subacute gastric catarrh.

When there is a diminished amount of urine of high specific gravity, without kidney inflammation.

When there is irritability of the bladder or urethra from concentrated or very acid urine, or when there is acute inflammation of these parts.

When there is loss of weight without anemia.

When there is dryness of the skin without kidney insumciency or anemia being the cause.

The Production of Consumption.—Newton in the *Medical Record* says that infection plays a secondary part in the production of consumption, and so does heredity; the principal causes are a man's life habits and environment. As the Imperial Board of Health of Germany has said, "It is impossible to extirpate all tubercle bacilli, therefore it is indispensable to so strengthen and harden the body that the absorbed germs cannot take hold upon it."

Stricture of the Esophagus.—In stricture of the esophagus the most significant symptom is the regurgitation of food mixed with saliva and mucus immediately after the act of swallowing.

THERAPEUTIC NOTES.

Hatcher (of the A. M. A. Council on Pharmacy and Chemistry) believes in making clinical tests of drugs, and, if possible, pharmacologic tests. He teaches his students that they must under no circumstances accept a pharmacologic test as final, as in the use of quinin, for example, but that the final test is the clinical result.

Paralysis Agitans.—Hyoscine is recommended (*The Hospital*) by Dr. R. T. Williamson to lessen the tremors and the restlessness of paralysis agitans. He prescribes gr. $\frac{1}{4}$ in 6 ounces of chloroform water; and of this mixture give two teaspoonfuls, equivalent to 1-96 grain of hyoscine hydrobromide, for a dose. The dose may be gradually increased to 1-75 grain. After a time the good effect of the treatment lessens, but if, after an interval, it is renewed, good results again follow.

Psoriasis.—Mr. Hutchinson's favourite local treatment (*The Hospital*) is Acidi Chrysophanic, Hydrarg. Ammon, of each grs. x., Liq. Carbonis Detergens, mx, Adeps Benzoat. \mathfrak{z} j. Remove all scales, as far as possible, by washing or a warm bath, and then rub the ointment into each patch for half an hour at bedtime. The ointment may be left on all night, but if this is disagreeable it may be wiped (not washed) off.

Impacted Cerumen. — Much suffering from earache, as well as deafness (particularly in the aged) comes from impaction of cerumen in the external auditory canal. This may be readily removed (*American Jour. of Clin. Med.*) by warming a little dioxide of hydrogen, pouring it into the ear while the patient is lying on a bed or table, and allowing it to remain for about five minutes. Then if the ear be gently syringed with warm solution of bicarbonate of sodium the plug will be easily removed. If not, it will be next day on repetition of the procedure.

GENERAL TOPICS

Medical Disbelief.—Doctors, it is notorious, are often bad patients, says the British *Medical Journal*; they know too much and can picture to themselves possible complications, unsuspected by the happier layman, which may make even a simple illness formidable. The same circumstance tends to make them, in Chief Justice Bowen's famous phrase, too "conscious of each other's unworthiness." This characteristic was hit off with good-natured satire by Du Maurier in one of his *Punch* pictures where he shows a sick physician being urged by his anxious wife to send for one of his colleagues. The suffering doctor replies, "Well, you see, we go in for thinking each other quacks!" The profession of disbelief in the resources of medical art—as practiced by others—is at present the badge of a tribe of highly superior physicians whose names are flying about *per ora virom*. But medical scepticism was probably never more emphatically expressed than by Lieutaud (1703-80), first physician to Louis XVI. Being near his end, his confessor, who was anxious to snatch the brand from the burning, plied him with a battery of questions as to his faith in the mysteries of religion. The dying man at last roused himself to reply with his last gasp: "I believe in everything, except medicine!"

The Causes of Death of Some Great Physicians.—Dr. William Pepper in a most interesting paper presented at a recent meeting of the Philadelphia County Medical Society discussed the causes of death of eminent physicians. He stated that Laennec fell a victim to a disease, the nature of which he had taken pains to describe. Lancisi and Corvisart died of diseased heart, and Boyle sank under the ravages of the disease of which he had been the most successful illustrator. Sir Benjamin Brodie, the great surgeon, died of cancer of his right shoulder joint. Dupuytren, the most famous surgeon of the last century, died of an empyema. Refusing to submit to an operation, he said that he "would rather end his life through God's hand than that

of a surgeon." In more recent times Milkulicz, who wrote on cancer of the stomach, himself fell a victim to this disease. Fowler, of Brooklyn, having written on appendicitis, died of this disease. On the memorial tablet of Dr. Jesse W. Lazear, who died of yellow fever, are the words, "With more than the courage and devotion of the soldier he risked and lost his life to show how a fearful pestilence is communicated and how its ravages may be prevented." Dr. Guillotin, the inventor of the guillotine, had his own head chopped off. A number of distinguished physicians have been great sufferers from the gout. Sydenham said: "More wise men than fools are victims of this affection." Angina pectoris has claimed its share of the medical profession, and in this group may be mentioned the names of Sir James Y. Simpson, Sir Charles Bell and John Hunter. Instances are cited illustrative of Osler's statement that the profession offers many examples of good work thoroughly and conscientiously carried out by men with aneurism of the aorta. Dr. Thomas King Chambers first had an aneurism in the left popliteal artery, eleven years later one in the right leg cured by pressure, and finally aneurisms of the carotid arteries. Richard Bright died of the consequences of extensive and long-standing ossification of the aortic valves of the heart, the exit for the blood being reduced to a mere chink. Robert Liston died of an aneurism of the aorta, which must have existed for years, and been fostered by the great physical exertions, which characterized his recreation as well as his work. Another group is given, including those having suffered from apoplexy, and still another and larger group is classified under the heading of miscellaneous.

True Ethics—Truthfulness and Plain Dealing.—"Medical men are called upon to exercise too wide a discretion in the course of their daily dealings with the world to render it reasonable to expect them as a body to submit to tutelage; and nothing could be more disastrous to their prestige than the existence of a brief that they speak and act under the guidance of some professional or irresponsible tribunal. Such a condition of subordination is natural

enough in the case of a trade union, and may even be necessary in order to allow its executive to wield the force of numbers; but it is wholly unsuited to the conditions of a profession composed of men fully competent to exercise their own judgment, and in no way needing the guidance of others. We urge upon the younger members of our calling the propriety of thinking for themselves in relation to any difficult positions in which they may be placed, and of guiding their action by the simple rules of truthfulness and plain dealing." —*The London Lancet*.

NEWS ITEMS.

Deaths of Physicians in 1907.—During 1907 the deaths of 2,013 physicians in the United States and Canada were noted in *The Journal of the A. M. A.*, equivalent to an annual death rate per 1,000 of 16.1, based on an estimate of 125,000 practitioners. This death rate does not differ materially from those of the previous five years, which were, respectively, 1906, 17.2; 1905, 16.36; 1904, 17.14; 1903, 13.73, and 1902, 14.74. The age at death varied from 21 to 97 years, the average being 58 years, 11 month and 18 days. The number of years of practice of the decedents varied from the first year of practice to the seventieth, with an average of 30 years, 4 months and 21 days. About 11 per cent. of those who died were members of the American Medical Association. Chief among the causes of deaths were heart disease, cerebral hemorrhage, pneumonia and violence, in the above order.

Southern Surgical Meeting.—At the twentieth annual meeting of the Southern Surgical and Gynecological Association, held in New Orleans, Dec. 17-19, 1907, the following officers were elected: President, Dr. F. W. Parham, New Orleans; vice-presidents, Drs. Willis F. Westmoreland, Atlanta, Ga., and Henry D. Fry, Washington, D. C.; treasurer, Dr. Stuart McGuire, Richmond, Va.; secretary, Dr. William D. Haggard, Nashville, Tenn. St. Louis was selected as the place for holding the next annual meeting in 1908.

The American Journal of Urology.—Beginning with January *The American Journal of Urology* will be edited by Dr. William J. Robinson, Editor of the *Critic & Guide, Therapeutic Medicine, etc.* The journal will be enlarged in scope so as to include venereal and skin diseases and there will be added an abstract department which will review the genito-urinary and dermatologic literature in every civilized language. The subscription price has been reduced to \$2.00. The publication and editorial

offices have been removed to 12 Mt. Morris Park West, New York City.

The Plague in California.—The report to date shows 114 verified cases, 12 of which clinically are beyond doubt plague but have not been verified bacteriologically, 69 deaths, 44 recoveries and 9 patients remaining under observation. In Oakland no cases have been found for some weeks, the report remaining 9 verified, 6 dead and 2 suspects. No plague rats have been found in Oakland for the last two or three weeks. Rats both in Oakland and San Francisco are becoming scarce. In Richmond, Contra Costa County, examination of all dead is now enforced, but no cases have been noted for some weeks.

The Archives of Internal Medicine.—Announcement has been made by the American Medical Association that a new publication to be known as the *Archives of Internal Medicine* will appear about January 15, 1908. Monthly issues are expected and two volumes will be published annually. A strong editorial board has been created and the publication will be devoted to original studies on clinical medicine carried out at the bedside or in the laboratory, and to physiological, pathological and pharmacological researches that have a bearing on the nature, diagnosis or treatment of disease.

No advertisements will appear in the *Archives*, an eminently fitting policy in view of its issuance by a scientific body. In this connection it is perhaps not too much to hope that a like policy will soon be adopted for the *Journal of the American Medical Association*, in order that it may be removed once and forever from the realm of commercial enterprises. The *Journal* is worthy of such a step which in view of its ownership and objects, cannot long be delayed.

The new *Archives* will have a subscription price of five dollars per year, but as an introductory offer a rebate of one dollar will be allowed to members of the A. M. A. and to subscribers to the *Journal*.

Death of Dr. Lassar.—Professor Oskar Lassar of the University of Berlin, a dermatologist of international eminence, died on December 23 at the age of fifty-eight years.

The Fourth Annual Meeting of the National Association for the Study and Prevention of Tuberculosis will be held in Chicago, June 5th and 6th, 1908. The organization of the Sections has been arranged as follows: *Sociological Section*—Mr. Ernest P. Bicknell, Chicago, Chairman; Mr. Alexander M. Wilson, Chicago, Secretary. *Clinical and Climatological Section*—Dr. Henry Sewall, Denver, Chairman; Dr. H. W. Hoagland, Colorado Springs, Secretary. *Pathological and Bacteriological Section*—Dr. L. Hektoen, Chicago, Chairman. *Surgical Section*—Dr. A. E. Halstead, Chicago, Secretary. *Section of Tuberculosis in Children*—Dr. William F. Cheney, San Francisco, Chairman.

BOOK REVIEWS.

Human Anatomy.—By GEORGE A. PIERSON, M. D.
J. B. Lippincott & Company, Philadelphia
and London, 1907.

Human anatomy, as considered in this volume, presents all material known up to the present time. The contributors are all American men and men whose reputations as writers in this branch is well established. The editor's name has long since been known as an authority and voluminous writer. The arrangement of this anatomy is very similar to other works on the subject. The practical considerations which are entirely new, well placed and highly instructive are found at the end of each chapter. The description of muscles and bones is very much more concise and to the point than most anatomies and yet very complete. The majority of illustrations are entirely new and show very careful work on the part of the dissector and artist. The consideration of the atrio-ventricular bundle is here given due space and is probably the only anatomy, excepting the last edition of Morris, to give the subject a description. The Basle Nomenclature (B. N. A.) is used throughout the volume. This work with its many attractive features will doubtless be placed among the standard works on the structure of the human body. To teachers as well as students and physicians approval is assured will be the verdict. The volume contains over 2,000 pages with a very clear text.

Physiology.—By WILLIAM H. HOWELL, Ph. D., M. D., LL. D. Second Edition. W. B. Saunders Company, Philadelphia and London.

The generous approval and hearty welcome accorded the first edition of Howell's Physiology clearly demonstrates its value as a standard text book on the subject. Its great popularity among teachers deserves especial mention. The second edition, which has been thoroughly revised, will, we feel sure, be received with greater approbation than the first. The author has made necessary changes and alterations, bringing the work fully abreast of the time. The eliminations are fully counterbalanced by the necessary additions, leaving the volume about the same size as the first, over 900 pages. It is a thoroughly practical work, clearly written, well illustrated, and contains sufficient detail for the student and physician for whom it was especially written.

Clinical Anatomy.—By DANIEL N. EISENDRATH, Ph. B., M. D. W. B. Saunders Company, Philadelphia and London, 1907.

This valuable work appears in its second edition thoroughly revised and rewritten. No more beautifully and accurately illustrated volume could be wished for in this important branch of medicine. Eisenrath reviews anatomy strictly from a clinical standpoint, and portrays in an excellent and lucid style the topography and surface anatomy of the more important structures. Throughout the work he

frequently presents pathological conditions as illustrative of the distorted anatomy and also plates demonstrating methods of examination. The more minute anatomy is not considered in detail but left for text books on the subject. The importance of a work of this character in daily practice is well known. Today, clinical anatomy is found an important subject in all of the more prominent medical colleges. The literature and illustrations on the joints and extremities are especially praiseworthy. For practical and clinical purposes, this work has no substitute.

Diseases of the Skin.—By ARTHUR VAN HARTLINGEN, Ph. B., M. D. Fourth Edition. P. Blakiston's Son & Co., 1907.

Dermatology, as presented in this, the fourth edition, will find greater approbation among the profession than the former editions of this work. Instead of arranging the diseases alphabetically, we find them considered according to the standard classification and almost entirely rewritten. The illustrations are fairly numerous, and yet not highly colored but rather clear. The reading matter is lucidly written and unnecessary words are omitted. The student will find this a valuable discourse on skin diseases.

MAR 12 1909

BOOKS RECEIVED.

Compend of Surgery. For students and physicians, including minor surgery and a complete section on bandaging. By ORVILLE HORWITZ, B. S., M. D., Professor of Genito-urinary Surgery, Jefferson Medical College. Sixth edition, revised and enlarged with 195 illustrations and 104 formulas. P. Blakiston's Son & Co., Philadelphia, 1907.

Thirty-fourth annual report of the State Board of Health of Michigan for the year ended June 30, 1906. Wynkoop, Hallenbeck, Crawford Co., Lansing, Mich., 1907.

Mt. Sinai Hospital Reports.—Vol. V, for 1905, 1906. Edited for the Medical Board by N. E. BRILL, A. M., M. D., 1907.

Anemia in Porto Rico.—Report of the permanent commission for the suppression of uncinariasis, 1906-1907.

Squibb's Materia Medica, 1908.—E. R. Squibb & Sons, New York, N. Y.

Dose Book of Specific Medicines.—Lloyd Brothers, Cincinnati, O., 1907.

The Operations of Surgery.—Intended especially for the use of those recently appointed on a hospital staff and for those preparing for the higher examinations. By W. H. A. JACOBSON, M. Ch., Oson., F. R. C. S., Consulting Surgeon, Guy's Hospital, and R. P. ROWLANDS, M. S., London, F. R. C. S., Assistant Surgeon and Surgeon to Orthopedic Department, Guy's Hospital, etc. Fifth edition, with 777 illustrations. Vols. I and II. P. Blakiston's Son & Co., Philadelphia, 1908.

American Medicine

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The Conquest of Cancer is the title of a recently published book by Dr. C. W. Saleeby, F. R. S (Edin.) and it must be taken seriously by the medical profession though it is apparently written for lay readers more than doctors, and is the work of an advocate rather than a judge. The author might be called the Apostle Paul of the trypsin and amylopsin treatment suggested by Dr. Jno. Beard, Professor of Embryology in Edinburgh University, as a logical sequence of his trophoblast theory of cancer mentioned in our October issue. At present it is wholly immaterial whether this academic theory is right or wrong, for the only issue is whether these or any other enzymes are beneficial or curative, and on that point there is sufficient evidence presented as to diminution or cessation of pain, discharge and fetor, to make it incumbent upon the medical profession to give the method a trial. Indeed the use of pancreatic enzymes in other affections, particularly tuberculosis, has been practiced by a few American physicians for some years, and the preparations are now almost standard drugs with well defined physiologic activity. To use them in malignant growths is therefore rational whether Beard suggested them or not. Trypsin is only one of numerous undifferentiated enzymes in the pancreatic secretions, and these unknowns may be the real agents. Until quinine was separated, the bark had to suffice and the same may be true here.

Suppression and distortion of facts is the serious charge brought by Saleeby against the leading British medical journals—a charge supported by such particularity as to amount to more than a scandal, for unless promptly explained, it means that the civilized world can no longer accept the attitude of these journals on any new scientific matter—and this is dreadful. We have already mentioned how the British medical profession in 1840 destroyed the first modern tuberculosis sanatorium and declared its originator a lunatic for practicing what is now the standard treatment. In the meantime they have been the unwitting causes of the deaths of hundreds of thousands of consumptives. Bigotry is dangerous anywhere, and worst of all in medicine, for should the enzyme treatment prove to be even a part of what is claimed for it, the British profession will again stand convicted of allowing an enormous amount of preventable suffering even if the cases are not cured, but this time there will be the additional charge of deliberate suppression of facts.

Unaccountable professional opposition is the strange feature of this case. The malignity with which Beard's theory is treated is in marked contrast to the respectful discussion of the somewhat similar theory of Cohnheim. One is as reasonable as the other, indeed Beard's has embry-

ological facts behind it,—the other is almost pure theory. It is at least undignified to dismiss Saleeby as a mere recent graduate, for that is the way the profession treated the 20-year-old Stokes when he wrote his book on the stethoscope—and Saleeby evidently does not intend to be dismissed. The scandal can be quieted in but one way—thorough investigation and publication of the facts. In the meantime opposition had better cease. There are so many lay writers who are exceedingly well read on medical topics, that it is idle to suppress any honest theory, no matter how bizarre it may seem. The time has long gone by when progress can be barred as easily as it was in the case of tuberculosis.

Beard's theory is still unproved and will not be proved by the success of enzymes nor disproved by their failure. Their success might merely mean a new way of attacking atypic cells due to parasites. It would not be the first time that successful therapy was based on a false theory. The charge that publicity in the lay press will prevent resort to early surgery is almost childish and would equally apply to the lay reports of the phenomenal successes of X-rays and radium in cancers suitably situated. By all means let there be more publicity to the end that a possible boon to mankind be known.

Medical literature in the lay press comes up for renewed discussion. The public has naturally been horrified to learn that a scientific matter has been excluded from the leading medical journals or garbled, and the indignation aroused bodes no good to future donations for cancer research. These donors want the facts. The

worst of the matter is the revelation to them that adverse reports were probably due to feeble or worthless preparations and that the Middlesex Hospital used methods or preparations so unclean as to cause abscesses. We have been inclined to the view that the treatment was unduly and prematurely exploited and that the medical press was not sufficiently utilized, but it now looks as though the English lay press should have been used even more than it was, for the German cancer research, under the venerable Von Leyden, published much confirmatory evidence which was more or less ignored by the British journals. Saleeby has certainly shown himself to be a man of unusual attainments and ability who must be given a hearing, even if he has violated some of the canons of medical ethics. In extenuation it must be confessed, that in this 20th century, an enlightened public demands and needs news of medical theories and progress and is bound to get it in the only press it reads. If physicians will not write for it, how can the need be filled?

The delay in reorganizing the Army Medical Department is in marked contrast to the promptness with which European nations have profited by the experiences of the Spanish, Boer and Russian wars. Although the medical work of the Japanese was not nearly so excellent as at first supposed, they were the first to realize that military sanitation had become an essential part of the art of war and that the sanitarian must have a status of authority. All other nations have hastened to do likewise,—we alone excepted. Moreover we have done the opposite and our medical department has sunk into a desperate condition.

The military status of the medical officer was formerly that of a semi-civilian for the relief of sickness and he was attached to the army rather than a part of it. He now has the role of making the army an efficient weapon and he is really a belligerent—a specialist among specialists in the art of wounding and killing. His exemption from capture as a prisoner of war was logical when there was no science of sanitation, for at the time of the Geneva convention he had no other duties than relieving distress. He will succor a disabled enemy now like every other civilized man, but his real duty is to make his own army a destroyer of enemies not yet disabled. He is in closer touch with every part of the machine than officers of any other staff department and suffers a higher mortality in battle, yet the law still classes him with paymasters as attached to the rear of the army but not in its real staff at the front. Until this status is changed it is idle to expect the fullest efficiency.

The Army Medical Bill has repeatedly passed the Senate and been held up in the House. The Representatives still seem to think that the surgeons are only practicing physicians needing no special training in the enormously complex science of military sanitation and that plenty of them can be obtained at a moment's notice. As a matter of fact a war will repeat the malodorous record of the volunteer camps of 1898 where there were hundreds of splendid physicians to cure disease but few practically trained sanitarians to prevent it. Even if there were such specialists they did not have authority to use their knowledge. There must be a large corps of such men trained beforehand and their status must be changed by law. At present the

medical officers are so few in number that they cannot even attend to the sick of our small peace army, and the prospects of promotion are so bad and the pay so small that there is a general discontent which prevents the highest efficiency. The increase provided by the bill is far from sufficient, yet it has been cut down by the House Military Committee—a deplorable mistake which must be corrected. It is said that Speaker Cannon, who by common report has hitherto blocked the bill, is now in favor of its passage, and it is hoped that Congress will push it through at once, or be prepared to accept the blame for disaster if war should be thrust on us—and the people are in no mood to tolerate a repetition of 1898.

A Rational View of Drug Therapeutics:

—In any comprehensive consideration of the treatment of disease it cannot fail to appear that therapeutics is an art, not a science, and that the personal equation of the clinician is the principal factor in achieving success. The infinite variation of individuals with the constantly varying influence upon the human organism of heredity, environment and habits make it certain that the matter of absolute medication must forever be an unknown quantity. Fortunately, drug treatment is only a part of the practice of medicine. Diagnosis, prognosis, prophylaxis, hygiene, dietetics and so on are all as prominent in the sum total of a physician's work as the administration of drugs, and this does not carry any reflection on the latter, for it is a sorry physician who does not believe in the intelligent use of medicaments.

But what shall the modern physician use? That is for each one to decide according to each particular case viewed in

the light of knowledge, observation, experience, and personal investigation along similar lines. If one man uses a decoction of herbs to his entire satisfaction, he is quite as much within his rights as he who prefers to write an elaborate prescription to be extemporaneously filled by his druggist.

The fact is, the whole question of the successful treatment of disease always resolves itself down to the pivotal interrogation, "what are the results?" and while in their student days, physicians must lay a foundation of therapeutic knowledge by studying classified therapeutic data, the usefulness of medical men in a practical sense always depends on their ability to amplify or modify what they acquire from study by what they learn from their own experience.

Granting, therefore, a certain modicum of truth in the foregoing it is hard to understand the spirit of intolerance against drugs so prevalent among even broad-minded physicians. Evils there have been in the purveying and exploiting of medical products, but it is the methods not the products that are to be condemned. To reject all drugs and hastily condemn all pharmaceutical preparations without discrimination is a course the very antithesis of what is to be expected from a scientific profession that recognizes no pathy, no school, no doctrine, nothing but that great underlying principle of medical practice—*the best possible results in the best possible way.*

The medical profession assuredly has a right to demand of the pharmaceutical manufacturer that he shall make good his claims concerning the superiority of his products in the matter of quality, purity,

uniformity and pharmaceutical skill; that he shall be honest and frank with the medical profession in regard to the quantities or proportions of the active or potent ingredients in definite doses; and that his literature and published statements shall be free from misrepresentations, unwarranted claims, and everything calculated to mislead or deceive.

On the other hand the medical profession owes it to right, justice and honest progress not to arbitrarily reject any legitimate product without a fair open above-board investigation; and to never condemn nor stigmatize any pharmaceutical manufacturer on the un-American basis that a person is guilty until proven innocent. Above all this, moreover, the medical profession must awaken to the great salient fact that the evils so freely condemned are after all more the result of internal than external conditions. It is up to us to clean up, to create a broader professional intelligence, and thus remove the conditions that have created the evils that we are now alive to.

Thrice blessed is the man, physician or follower of any other calling, who has not lost his faith in the innate honesty of his fellows. It is a splendid asset to still believe that if men are crooked and dishonest, it is conditions, false values or mistaken ideas that have led them astray rather than, say—"malicious animal magnetism."

It must be admitted that one's faith in humanity is often shaken, but to surrender one's optimism is always a calamity, and cannot fail to lower one's ideals and aspirations.

The principal obligations of medical men to-day are to look up, climb up, and lift up; to build and not to destroy; to seek and

foster the good as well as to seek and eliminate the bad; and finally to have no flexible standards of virtue and right. Such being the case the need of the hour concerning the problems of materia medica requires not the destructive work of the anarchist, nor the nihilist, but the broad, liberal, up-building policy of the constructionist. In other words, in developing a better, more logical condition of affairs in the practice of medicine the evils in this as well as in the collateral branch of pharmacy will be recognized and consigned to an inevitable oblivion.

We must be big enough and broad enough to realize that the more we know about drugs the better they will serve us, and when they fail to accomplish what we desire, it is because we have used them not wisely nor well. Hasty condemnation is an evidence of weakness and a sad paraphrase on our vaunted usefulness as medical men. It is the better part to seek to learn through our failures, to pick up the strands of even half successes, and with intelligent effort strive to get each day a little nearer the coveted goal of positive results. Such a spirit is the spirit of optimism, which, shrouded in failure to-day, may stand forth to-morrow in the full bloom of therapeutic success. It is the doctrine—not of *nihil est*—but of *nil desperandum*.

Exaggeration and misrepresentation are always unseemly but never more so than when they emanate from those whose words are endowed with unusual importance. Dr. Frank Billings of Chicago would seem to be the latest offender. He is reported¹ as flatly declaring that 1,000,000 persons in Illinois are suffering from tuberculosis in some form, and in at least an incipient degree.

Forceful efforts to arouse people to the menace of tuberculosis are justifiable but it is questionable if such sensational statements, that even if partially true require qualification and explanation to make them correct, are ever proper and calculated to command respect.

Dr. Billings doubtless knows that many of the highest authorities in the study of tuberculosis, hold that practically every human being who reaches a mature age becomes infected with tubercle bacilli. Post-mortem reports of people dying from many divers diseases show almost always lung involvement of some degree. There is more or less truth, therefore, in the German axiom "that every one has a bit of tuberculosis," but how ridiculous it would be the state that we are all tuberculous!

The significant fact in the situation is that while probably all people become infected with tubercle bacilli only about 14 per cent of all deaths are actually due to tuberculosis. This shows conclusively that the vital resistance of the individual is of prime importance and that the human organism is able to protect itself to a very large extent in the majority of instances. If Dr. Billings had said that 1,000,000 or even all the people of Illinois were doubtless infected, but that only those would suffer or die in whom the disease was able to make headway against the natural body forces of resistance, he would have been less sensational, but far more accurate. That 1,000,000 people of Illinois are actually affected with incipient tuberculosis, or worse, in a population no more poorly nourished or weaker than that in any other section of the country suggests a picture of

¹ Medical Counsellor, Jan., 1908, p. 10.

widespread, active, progressive disease that is distinctly overdrawn—if nothing more.

It is high time that medical men realized that the public are entitled to the truth, that exaggeration, sensationalism and scare-head medicine, are boomerangs that all too often come back and hurt not only the offender, but the whole profession.

The efforts of many prominent medical men to give the public useful information, even through the lay press is worthy of all praise, though severely criticised in certain quarters. The people need a world of teaching and instruction in hygienic and sanitary matters, but for Heaven's sake let us tell them the truth. Let us be ever ready to sound alarms when necessary, but not so ready that we create the suspicion that our cry is wolf, wolf, and thus destroy the confidence that always has been and always will be the greatest of all medical assets.

The acquittal of Thaw and the hanging of Guiteau should be considered together in all discussions of the proper disposition of insane murderers. It is quite evident that the people think the murder of a President is a far worse crime against society than the killing of a private citizen, and as a deterrent to others, the offender must be executed, sane or insane. Whether this popular opinion is right or wrong it will probably persist and must be taken into account. Yet it is equally evident that such an execution will never be tolerated in ordinary murders when there is proved to be even a reasonable presumption of insanity. Such cases are presumed to be harmless until they prove otherwise, for we are so afraid of the possibilities that through conspiracy sane persons will be locked up to possess their property or for other crim-

inal ends, that the benefit of the doubt is always given to the suspect. The question now before the medical profession is whether after such a case has once shown himself dangerous, he should ever be given the opportunity again. It may sound brutal to suggest life confinement even should recovery ensue, yet such a proposition has been seriously made more than once. If the disease is incurable, of course the question is easier of answer. The alienists have a great responsibility to society as well as to the patient, for if release is followed by another murder, who is to blame?

The value of passive hyperemia in the treatment of chronic inflammatory processes has been conclusively demonstrated but it has remained for a New York physician to make its application practicable in pulmonary tuberculosis. Dr. A. C. Geyser's paper in this issue of *American Medicine* is not only exceedingly interesting, but particularly commendable because of the original work which it represents. It is such work that stands for real progress in the successful treatment of disease, and the evolution of the methods outlined from the study of clinical material, rather than from animal experimentation is especially praiseworthy. It is one thing to develop a theory in the laboratory, but quite another to convert it into fact and produce tangible results in actual practice. Dr. Geyser's results should furnish much food for thought and lead to much investigation along similar lines. It is very probable that a practical means is at hand for still greater victories over humanity's chief scourge, but even if more extensive investigation proves that Dr. Geyser's methods are of only limited application, his work and studies will not have been in vain. The demonstration of the limitations of a method of treatment is often as important as its discovery.

ORIGINAL ARTICLES.

THE DETERMINATION OF PEPSIN WITH THE REPORT OF A NEW METHOD.

BY

DR. ERNEST FULD,

Berlin,

AND

DR. LOUIS A. LEVISON,

Toledo, Ohio.

Of the various functions of the stomach, unquestionably the greatest interest is attached biologically to its capability of digesting albumin. In order that this function may be exercised, there must be present hydrochloric acid (or other strong acid) and a substance peculiar to the stomach juice, known as pepsin. Quite naturally, the quantitative estimation of pepsin under both normal and pathologic conditions early attracted attention, as its determination affords us a specific measure of the action and capability of the glands of the stomach.

Until the appearance of the Mett method, the determination of pepsin was carried on only through ill defined methods. The Mett method was a great advance and was used by most scientific workers. It has not, however, entirely fulfilled its expectations. Its technic is so well known that we will describe it only briefly. Capillary glass tubes, measuring 1mm. to 2mm. in diameter, are filled with white of egg. The tubes are then coagulated, cut into short lengths and exposed to the action of the fluid to be tested for a variable time at body temperature. The pepsin strength is estimated from the length of the albumin column digested at the end of the tube. A

special magnifying apparatus is required to read off the length of the digested albumin in millimeters.

The method of preparing these tubes is so variable with different workers, that we will mention the method used by us. Egg-albumin is beaten well and allowed to stand over night. The liquid part is then filtered through several layers of paper. A test tube is filled with the filtrate, into which the perfectly cleansed capillary tubes are inserted and allowed to fill. After filling, the test tube containing the filled tubes, is immersed in water at 95° C for 5 minutes. After cooling the test tube is broken, the tubes removed and immediately sealed with sealing wax. Only tubes without air bubbles are retained. The practice of preserving these tubes in alcohol or formalin solutions destroys their value for exact work as we have demonstrated by comparative tests.

There are certain objections to the Mett method which should be mentioned.

(1) It requires a long waiting time, varying from ten hours to twenty-four, which latter time seemed to us more exact and which we always employed.

(2) Then again, as Blum and Fuld have shown, the composition of egg-albumin is not constant. The above writers have demonstrated a difference in chemical composition of eggs depending on the season, the source and the food eaten by the fowl. That this variability should have an effect upon exact comparative work is easily understood.

(3) Again the digestibility of Mett tubes is in proportion to the softness of the albumin. From the exact methods prescribed for the preparation of Mett tubes, it would seem that their softness would be constant, but we have been able to demonstrate differences in various tubes, possibly from thickness of the glass wall.

(4) Another point to be mentioned is that the usual worker does not bring every stomach juice to a fixed acidity, say a free

¹ (From the Experimental-Biological Department of the Pathologic Institute of the University of Berlin).

hydrochloric acid value of 30. The titrations for the exact hydrochloric acid deficiency and the little algebraic calculation necessary are often omitted. For scientific purposes, every test should be carried out with a constant acid value.

(5) Another objection is that the test in its original form permits no conclusions as to the ferment concentration, as dilutions of the stomach juice do not act proportionally, but vary. Schiff and Nirenstein, who have accurately studied this relationship, advise not an undiluted, but a 16 times dilution. According to Kaiserling, in such dilutions and higher, the Schütz rule does not hold good.

Hammerschlag uses for the determination of pepsin a 1% solution of albumin and measures the albumin content by means of the Esbach tube, after one hour of digestion at 37°C, controlling this with a tube containing no stomach contents. From the difference between these tubes, Hammerschlag determines the digesting powers of the stomach.

An interesting and in many respects instructive method has been advised by Volhard, who uses a pure albumin preparation—Casein Rhenania.

After digestion, Volhard salts out the casein and determines the amount of acid combined albumin in the filtrate through titration. The method of Thomas and Weber as with all methods which have to do with drying and weighing, can not be considered practical.

Another pepsin test should be mentioned here. This is the method of Jacoby, discovered a few years ago and but recently recommended by him for practical work. This method consists in the clearing of a cloudy Ricin solution through the action of pepsin and hydrochloric acid. The disadvantage of Ricin lies in its impurities, which produce its cloudiness and the lack of a constant composition.

Liepmann describes a similar method, whereby in place of the Ricin solution, he uses a solution of egg albumin, artificially clouded.

It was our endeavor to find a method in which the advantages of the Volhard and Hammerschlag methods could be retained and their disadvantages avoided. It occurred to one of us to try edestin,¹ which is a soluble, well-defined albumin.

When a 1% solution of edestin is prepared in diluted hydrochloric acid, an opalescent fluid results. If this fluid is exposed to the action of graduated amounts of pepsin and then examined for its acid combining power, the following will be noticed:

The alkali necessary to neutralize a certain amount, using dimethylamido-azobenzol as the indicator for free HCl is the same whether much or no pepsin has been added. If one now titrates to the end point, using phenol-phthalein as the indicator, there will be no difference observed in the amount of alkali needed, but a noteworthy change during the titration. Shortly before the change to red, a precipitate occurs, the amount of which is in inverse ratio to the intensity of the introduced pepsin. By further addition of alkali, the precipitate disappears, more or less completely. This observation showed us that it was possible through standing or centrifugation to determine the amount of the neutral precipitate and from this determine the digestion capability, somewhat as Hammerschlag has done. However, to determine pepsin in this way, it is necessary to be governed by certain suppositions, which are still open to controversy. Thus,

¹We wish to express our thanks to the Hoeschster Farbwerke, who placed a sufficient amount of edestin at our disposal for experimental work.

Hammerschlag defends another law than that of Schutz-Mett. It would seem more advisable to incorporate some other procedure, analogous to that of Brucke, who started from the premise that however the pepsin law may be formulated, two solutions which in an equal time produced the same demonstrable digestion, must contain equal amounts of ferment. He prepared two rows of dilutions. In one he started from a standard solution and in the other from the solution to be tested. He then determined how many times the one and the other must be diluted in order to exercise a definite action within a certain time. From this, he determined how many times stronger or weaker the one was than the other. As a criterion, he employed the first visible appearance or the completion of the digestion of a fibrin flake or piece of coagulated egg albumin. In our work mentioned above, it would be sufficient for example, to measure the amount of gastric juice necessary to prevent a precipitate from being thrown down, or at least only an inconsiderable amount within a certain digestion time. This method, however, has its disadvantages.

In the first place, the solution almost always becomes cloudy during the neutralization, so that the determination of the appearance or non-appearance of the precipitate is difficult. Secondly, the test is not particularly accurate at room temperature and also for short digestion periods, two conditions from which we did not wish to depart. We observed that every time an abundant precipitate fell down, the overlying fluid cleared. The appearance of the first cloudiness means a certain limitation of the precipitate formation and therefore an effect upon the pepsin. It always seemed to us that the time which would

be required for the accurate neutralization of such a series of tubes, would be both a theoretical and practical objection. We, therefore, passed over neutralization by means of titration, but attained the same end by a layer formation, using for this purpose a strong ammonia solution. Through diffusion a neutral layer forms between the two fluids and in this layer, a ring-like cloud of undigested albumin falls down.

In order to make the test more sensitive, we adopted a more dilute solution of edestin, namely, a 1-1000 solution. This dilution has the advantage that the opalescence is no longer present. In all our work, a standard hydrochloric acid solution is employed for diluting purposes. This solution has an acidity of 30, corresponding to the free HCl found normally after a test breakfast. To make this quickly, one can either take 3.0 c. c. of normal HCl and 97.0 c. c. distilled water or 30.0 c. c. of a deci-normal HCl solution and 70.0 c. c. distilled water. In preparing the 1-1000 edestin solution, the edestin is first rubbed up with a small quantity of the diluting solution and then the full amount of the solution added. Boiling the edestin solution seems to have no effect, but our work was done with fresh solutions.

The test is carried out in the following way. Six clean test tubes, preferably with a diameter of 1.0 cm., are taken and in each a graduated amount of diluted stomach contents is placed. In the first tube is placed, say 1.0 c. c., in the second tube 0.7 c. c., in the third 0.4 c. c., in the fourth 0.3 c. c., in the fifth 0.2 c. c., and in the sixth 0.1 c. c. These amounts are measured out with a 1.0 c. c. pipette graduated into hundredths. There is no obligation to adhere to the above figures. In

fact, we worked with roots of 10 as 1.0, 0.64, 0.40, 0.25, 0.16, and 0.10 but these are not essential. In our routine procedure, we use the stomach contents diluted 1-100, but shall speak of this point below. To each of the above six tubes, an equal amount (2.0 c. c.) of edestin solution is added. For this, we employed a 5.0 c. c. or a 10.0 c. c. pipette graduated into tenths or a small 2.0 c. c. pipette fitted with a rubber bulb. After the edestin solution has been quickly added, the tubes are allowed to digest thirty minutes at room temperature. When this time has elapsed, strong ammonia is allowed to run down the side of the tube so as to form a layer above. It is much easier to produce a good layer if narrow test tubes are employed. A pipette with or without a rubber bulb may be employed for the ammonia. It is scarcely necessary to caution about allowing ammonia to enter the mouth in direct pipetting. After the ammonia has been added to each tube, the row is examined, best with reflected light against a black background, such as a book cover, etc. If digestion has been complete, there will not be in any tube a ring formation of precipitated albumin. If digestion has been incomplete or absent, there will be a distinct white ring-like cloud between the two layers of fluid. By finding the test tube where a distinct ring ceases to form, there can be determined the point where digestion is complete. Thus if tube with 0.7 c. c. has no ring, and tube with 0.4 c. c. has a ring it can be said that the stomach contents has a strength of 0.7 in a 1-100 dilution. The pepsin strength can also be recorded in another way. The dilution of stomach contents employed is multiplied by the amount of the edestin solution used and this product divided by the amount of stomach contents thus $100 \times 2.0 \div 0.7 =$

285.+, so that one can say that this stomach content has a pepsin value of 285. Solms working with the Jacoby method used this method of recording values, but he disregards the amount of albumin solution used, so the result would be only one-half as much in our example. This method is customary in fat-enzyme experiments.

In working out the technic of the test, we endeavored to find a substitute for the ammonia in the final step. We experimented with a weaker alkali-borax—which in a 10% solution is well adapted for a “ring” test and gives the same ring as does the ammonia.

In these experiments we started with the supposition that as edestin was soluble in acids, it would fall out of solution upon neutralization. The reasoning seemed plain, but it did not hold good.

Edestin is a substance prepared from hemp seed and belongs to the globulins. This latter class of proteids is soluble in dilute neutral salt solutions but as a matter of fact, edestin in water containing sodium chloride falls down as a crystalline precipitate. When our 1% solution of edestin in hydrochloric acid is neutralized by means of a deci-normal sodium hydrate solution, nothing more than NaCl results, still the edestin falls out of solution. We have mentioned that the edestin solution is not changed by boiling. From this, it must be concluded that in our edestin solution (the name is retained on account of its convenience) we have not edestin, but a body of the characteristics of an acid-albumin. According to the researches of Osborne, the resulting body is not a true acid-albumin, but a body between a globulin and an acid-albumin, which he calls edestan—a so-called globan. This edestan results remarkably quickly and easily from

the action of diluted acids upon edestin, so that even in freshly prepared solutions as we employed, edestin, as such was not to be met with. Edestin as opposed to edestin is characterized by the loss of its solubility in dilute neutral salt solutions. It was interesting to determine whether this was due to the neutral reaction or on account of the presence of salt and we convinced ourselves that in spite of the continuance of an acid reaction from very small amounts of salt, the precipitate was still produced.

When a layer was formed on the edestin solution by the use of a 10% solution of sodium chloride, a ring appeared, not less clear than that produced with borax. This latter method is of surprising sharpness and it permits undigested albumin to be demonstrated, where the other methods fail. However, such a delicacy is only necessary for quite exceptional cases and for quite special purposes. In general, it is not only superfluous, but harmful. The non-appearance of such an over-sensitive reaction would show nothing else than that the ferment action had come near its true end point. For practical purposes, the accurate determination of the real end point is not at all necessary.

We then tried the addition of solid NaCl to the test and after shaking ascertained the presence or absence of cloudiness. In this form, the test is very simple and accurate.

Again, the amount of precipitate caused by salt saturation in a 1% solution of edestin, gives a fair idea of the extent of peptic action undergone by the solution. After all, the above experiments in series are only of approximate value and to the degree of the closeness of the tubes together at the critical point. For these reasons, direct

determinations are of interest even when the laws upon which they are based are questionable.

The edestin method allows a direct determination by a single test to be made as follows: It is based upon the fact that if you add a 10% solution of NaCl to an edestin solution, the cloudiness will be in proportion to the pepsin action, that is, the more the pepsin amount or the longer time it has digested, the more NaCl solution will it take to produce a distinct cloudiness. In a certain stomach juice, 0.5 c. c. NaCl solution sufficed to bring forth a distinct cloud, while at the end of 30 minutes digestion, 2.0 c. c. NaCl was not sufficient.

One can also proceed in the following way, a 1% solution of edestin is prepared and of this a suitable amount (5.0 c. c.-10.0 c. c.) is digested with the not too strongly diluted stomach contents. Then solid sodium chloride is added, the tube well shaken and the height of the precipitate measured. The precipitated albumin very quickly assumes a definite volume and as it exists under no considerable pressure, its volume is dependent upon the pepsin amount and allows itself to be read off after standing a short time. The falling of the albumoses only begins later.

We pass now to the employment of the edestin method in questions of theoretical and practical interest.

The view is generally held that the pepsin is secreted in amounts that have a definite relation to the amount of gastric secretion. For this reason one of us (Levison) carried out a series of investigations under different experimental conditions, whereby there was secured at regular intervals, the pure stomach secretions from the blind sac of Pawloff-operated dogs and the pepsin worth investigated. In

these experiments, the edestin method was employed, as it seemed to be the only one that could be used, where such dilutions were employed that would eliminate any checking action of anti-peptic substances. Blum and Fuld have demonstrated the presence of anti-pepsin, but under our experimental conditions we could demonstrate no action on their part, even after intentionally accumulating "anti-pepsin." These experiments which Levison will separately report appear to lead to the conclusion that the curves for gastric secretion and its pepsin content are not dependent upon each other. We will only say here that the pure gastric juice of dogs has a pepsin strength varying between 600 and 1600; and, although we cannot presume to offer similar worths for man, still it may be assumed that fairly similar results may occur in pure human gastric juice. One of us (Levison) has had a limited opportunity of examining the gastric secretion of the Berlin "fistula-girl," in whom there are direct openings both in the oesophagus and the stomach. The food is chewed normally, passes out of the oesophagus into the gastrostomy aperture in the abdominal wall. Investigating pure gastric juice after the introduction of water, it was determined that the stomach secretion had a value almost constantly 1600, e. g. as strong as our strongest Pawloff juice. After certain metallic suspensions (aluminium), the strength varied slightly around the above figure. It appeared that the concentrated, slimy secretion had a stronger peptic action than the more abundant and easier flowing kind.

Our estimations of the pepsin worth after the usual Ewald test breakfast gave in normal cases a value between 200 and 300. That is, using stomach contents diluted

1-100, it is necessary to have from 0.1 c. c. to 0.65 c. c. stomach contents to digest 2.0 c. c. edestin in $\frac{1}{2}$ hour at room temperature, more often a figure around 0.6 c. c.

In gastric cases, where the total acidity is low, e. g. around 10, it may be necessary to change the dilution from 1-100 to 1-10 and to allow digestion to proceed at body temperature (37°). In these cases, we also believe it is better to add a little sodium chloride in substance, rather than to form a ring with ammonia. It is hardly necessary to mention that in short time digestion experiments at body temperature, it is not sufficient to place the tubes in the air of the thermostat. They should be placed in water at 37° C. and it is very convenient to draw off for this purpose a little water from the water chamber of the thermostat. Digestion should be terminated at the end of one-half hour by transferring the tubes to cold water. We have demonstrated that digestion with the edestin method occurs four times as strong at 37° C., as at room temperature (20° C.).

In working with very weak dilutions or undiluted stomach contents it is necessary to call attention to a phenomenon which may give rise to confusion. When a layer with strong ammonia is formed on the stomach contents, a yellow ring ensues. This is not the sharp, white ring of precipitated albumin, but has a washed yellow appearance. After considerable effort to determine its origin, we discovered that ammonia added to watery extracts of white bread (German) gave the ring.

The cases of achylia gastrica which we investigated, came partly from the polyclinic of Dr. Paul Cohnheim and partly from the polyclinic of one of the authors. The pepsin values were either *nil* or very

small. In these cases, the edestin method at body temperature was of greater delicacy than the other methods which we tried. With such an exact method, when regular and continued pepsin estimations show a progressive decrease of the pepsin strength, it points with certainty to some destructive process.

In conclusion, we desire to recommend the edestin method for exact work. In our hands it has given satisfactory results, which we failed to obtain by the older methods.

LACERATION OF THE CERVIX AS A CAUSE OF POST-PARTUM HEMORRHAGE.

BY

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Many authors restrict the term post-partum hemorrhage to those cases in which the bleeding is due to atonic conditions of the uterus, or, to quote Jewett: "By post-partum hemorrhage is meant hemorrhage occurring shortly after the birth of the child and having its origin at the placental site."

It would seem proper, however, to include under the term all cases of undue bleeding occurring during the third stage of labor, or shortly after its completion. By those who accept this enlarged definition, it is usual to classify its causes under four heads:

- (1). Retention of the partially separated placenta or portions thereof.
- (2). Lacerations of the parturient canal.
- (3). Uterine atony.
- (4). Anomalies of the blood or blood vessels.

Under the second of these falls the lesion which I have taken for my subject.

Works on obstetrics almost universally state that serious hemorrhage may result

from extensive lacerations of the cervix uteri. It is usual also in papers and articles upon this subject to see this fact noted and to a greater or less extent discussed, but seldom is more than scant space and attention given this accident and its results in proportion to its relative frequency and importance.

ANATOMY OF THE CERVIX.

(a). The cervix is defined as that part of the uterus which lies below the level of the internal os. In the non-pregnant woman it varies in length from $2\frac{1}{2}$ to $4\frac{1}{2}$ cm., comprising in the virgin about one-half and in the multipara about one-third of the total length of the organ. The lower one-fourth to one-third projects into the upper part of the vagina at approximately a right angle and is known as the portio-vaginalis, or infra-vaginal portion of the cervix; the greater supra-vaginal portion lying above.

Anteriorly, the upper limit of the cervix about corresponds with the point at which the peritoneum is reflected from the uterus onto the bladder; from here downward to the vaginal attachment it is in contact with the connective tissue of the base of the bladder. Posteriorly, the peritoneum extends downward to the vagina, forming part of the anterior boundary of the cul-de-sac of Douglas.

Laterally are the attachments of the anterior and posterior layers of the broad ligament with the intervening connective tissue.

On both frontal and sagittal section the cavity of the cervix is fusiform, with a small opening above and below the internal and external os respectively. It is somewhat flattened from before backward, the membrane of both the anterior and pos-

terior surfaces being thrown into folds, the so-called arbor-vitae.

Histologically, the cervix consists principally of connective tissue with abundant non-striated muscle fibres and some elastic tissue.

The blood supply is almost entirely from the uterine artery, which arises from the anterior trunk of the internal iliac and entering the base of the broad ligament crosses the ureter and reaches the uterus just above the vaginal junction; here it turns upward and passes tortuously along the lateral border of the organ to anastomose with the ovarian artery. Just before reaching the cervix the uterine gives off the cervico-vaginal, which supplies the lower cervix and upper vagina.

About, or just below the level of the internal os two other larger branches are given off from each uterine artery, which pass around the cervix anteriorly and posteriorly to unite with those from the other side, thus forming an arterial circle around the supra-vaginal portion of the cervix—the circular artery. This is joined at about the middle of its course, in front and behind, by the azygos arteries of the vagina.

The veins form large plexuses around the arteries and unite to form the uterine vein on either side, which joins the hypogastric and this in turn the internal iliac.

(b). It is much more difficult to give an acceptable definition of what constitutes the cervix during labor and to outline its anatomy.

In 1872 Braune first recognized the existence of a distinct retraction or contraction ring. He noted that it lay at the level of the point of reflection of the peritoneum from the uterus onto the bladder and believed it to correspond with the internal os. Two years later Bandl questioned the cor-

rectness of this view, and, following him, Schroeder and others held that the internal os was completely effaced and that its remnant lay at a lower level. From that day until this the discussion has been going on, some authorities holding to one view and some to the other.

Williams, of Johns Hopkins University, believes with Schroeder and offers in support of his opinion the finding in a recent specimen of typical cervical mucosa for a distance of only $3\frac{1}{2}$ to 4 cm. above the external os, while above this point the tissue was distinctly uterine in character and covered by decidua.

This view would seem the more plausible, but in two of my own cases where a silk-worm gut suture was placed through the retraction ring immediately after the completion of labor, it was found to lie, upon removal two weeks later, at the level of the internal os.

This discussion, however, is foreign to our subject save in so far as it establishes the fact that we have lying below this ring an abundant arterial supply, i. e., the angle of the uterine artery, the circular artery of the cervix, and also the cervico-vaginal and azygos arteries of the vagina.

This lower uterine segment, bounded below by the external os and above by the retraction ring, corresponds more or less closely in conformation to the outlines of the presenting part of the fetus and to the extent of its descent.

METHOD OF PRODUCTION.

(a). Infra-vaginal portion. After dilation and retraction of the internal os, the bag-of-waters or presenting part begins to impinge against the external os; the lower part of the cervix is thus subjected to a process of excessive stretching and thin-

ning-out, to which it almost invariably yields to some extent. Furthermore, the anterior lip is sometimes carried down by the presenting part and lacerated, or macerated, beneath the public arch, or, in instrumental cases, is torn by the blade of the forceps. Thus some laceration of the infra-vaginal portion of the cervix occurs in nearly every case of labor, and the alteration in the external os thus caused is so constant that it is regarded by the profession as the most valuable in the group of signs indicating that a woman has experienced child birth.

These tears, however, do not involve vessels of any considerable size and never give rise to alarming hemorrhage, except, possibly, in diseased conditions of the blood; their tendency is toward spontaneous union, and the weight of opinion is against immediate repair.

(b). Supra-vaginal portion: A consideration of tears of the supra-vaginal cervix presents a very different picture. They seldom, if ever, take place where expulsion of the fetus is left to nature, but are frequent where in interest of mother or child instrumental or manual dilatation, version, high or mid-forceps, or some one of the destructive operations has to be performed.

Their production is also possible through rapid delivery of the after-coming head in breech cases, or even by violent and unskilled delivery of the trunk, after birth of the head, in an otherwise normal case.

Any statement of the factors in the production of this accident is incomplete without a reference to the administration of ergot during labor. This drug causes a tonic spasm of all the muscular fibres of the uterus and, since the cervix is rich in these, the tendency towards its rupture can be increased. Subsequent to the birth of

the placenta we have no drug more valuable than ergot, but it is to be deplored that even yet some continue its use for the purpose of hastening labor.

(1). Probably no one has failed to note, during artificial dilatation of the cervix in either the pregnant or non-pregnant uterus, the greatest zone of resistance is met at the plane of the internal os. (2). If made between the pains, before complete engagement and after dilatation of the external os, a careful examination will usually demonstrate the fact that the retraction ring firmly embraces the presenting part at its corresponding level. (3). Furthermore, a study of post-mortem specimens has made it clear that the greater part of the uterine musculature ends abruptly here. Therefore, it would seem probable that a large proportion of these tears begin at this greatest zone of resistance. More frequently they pass downward through the friable cervix to its lower lip, but their extension in any direction is possible.

Of course, the possibility of the production of a laceration beginning at the lower margin and extending on upward, even into the body of the uterus, has to be admitted, but the writer believes that extensive tears of the upper cervix occur in this way less frequently than from above downward.

Since the circular artery, a vessel of considerable size, lies below the level of the retraction ring, it is usually involved by tears of this character, and where they are of sufficient depth to enter the base of the broad ligament the angle of the uterine artery itself may be opened up.

In lacerations of this type the hemorrhage may not at first appear alarming and general symptoms do not at once manifest themselves. It is most persistent, however, and unless effectual haemostasis is

secured the total loss of blood will sooner or later prove serious, and, inevitably, give rise to constitutional symptoms, ending possibly in death.

SYMPTOMS AND DIAGNOSIS.

There usually begins, immediately after the expulsion of the fetus, a steady flow of bright red, arterial blood, augmented during uterine contractions by the normal post-partum flow. Although different in character, this is apt to be confused with hemorrhage from a partially separated placenta. It is an old axiom that the hand should be placed over the fundus immediately after the birth of the child, and if this manoeuvre is carried out the bleeding will usually cease when the uterus has been emptied of retained blood and clots and firm contraction has been secured.

Should the bleeding continue it is probably from an extensive cervical laceration, but, in either event, the prompt removal of the placenta is demanded—trying in succession friction over the fundus, Crede's method or some one of its modifications; these failing, manual removal should be performed.

From the rare condition of post-partum hemorrhage due to uterine atony the diagnosis should not be difficult. The flow occurs in gushes, is alarming in its amount, and the uterus is relaxed and boggy, and here again hemorrhage ceases for the time being after firm contraction is secured.

Serious hemorrhage seldom occurs from lacerations of other portions of the genital tract. This, however, is no invariable rule and such a possibility can only be excluded by a thorough and systematic examination.

Since haste is imperative, and an exact determination of the cause of the bleeding is necessary for the institution of appropriate treatment, an immediate digital

examination should be made. Having determined the existence of an extensive cervical tear, a more accurate knowledge of its location, direction and extent can be secured by grasping the lower margin of the cervix, anteriorly and posteriorly, with long volsellum forceps and bringing it into view. Some writers speak of the speculum as unnecessary, but, for my own part, I have found it impossible to complete the diagnosis or to properly treat these cases without the aid of this instrument.

The traction controls the hemorrhage temporarily, and, by allowing the uterus to recede while the lips of the tear are held well apart, the location of the bleeding point can be more or less accurately made out.

In these cases, where treated ideally, constitutional symptoms should never become manifest; but where left to nature, or inadequately treated, in a variable length of time, depending upon the amount of blood lost and the individual status of the patient, they will make their appearance. The pulse becomes rapid and thready, the respiration frequent and shallow, the lips blue and the skin cold and clammy; restlessness, thirst, dyspnea and vomiting appear, and finally, if allowed to continue, unconsciousness, convulsions and death.

TREATMENT.

Immediately after the delivery of the placenta from thirty to sixty minims of ergot, or some one of its sterile preparations, should be given hypodermically, not only with a view to lessening hemorrhage from the laceration, but also, that the patient may be spared all possible blood-loss from the placental site.

Many writers advocate the use of the gauze tamponade and it is unquestionably

the method of choice to control persistent oozing from lacerations, single or multiple, of the infra-vaginal cervix; but in my own hands it has proven absolutely unequal to staunching the flow from extensive tearing of the upper cervix where the uterine or circular arteries were involved. Prompt suturing of the tear will alone meet the indication under these conditions.

An anesthetic, if not imperative, is to be desired, and here, as in all other procedures within the parturient canal, the strictest asepsis should be observed.

Having brought the patient's hips well to the edge of the bed, or, preferably, placed her in the lithotomy position upon a table, a broad speculum should be introduced, the anterior and posterior lips of the cervix grasped with long volsellum forceps and the tear brought well down into the vulva. The traction will usually control the bleeding for the time being, especially if ergot has been administered, but it may be necessary to introduce a firm uterine pack.

Silk-worm gut seems the most suitable suture material because of its permanency and the ease with which it is rendered sterile. A large curved needle and a suitable needle-holder are necessary.

Although the result may be less elegant, it is certainly more practical to begin by placing the lower sutures first. By starting near the lower limit of the wound, they may be used as a means of traction, while working upward until the angle of the tear is reached. The needle should be carried well back from the margins of the wound and, after all the sutures have been placed, they should be firmly secured in succession by perforated shot.

After the laceration has been repaired, it is well to give a hot, antiseptic, uterine douche, followed by another of hot sterile

water, and, this in turn, by a light but firm tamponade of the uterus and cervix with plain sterile gauze. Having now released the grasp of the volsellum forceps and allowed the uterus to recede, a light pack of gauze should also be placed around the vaginal surface of the tear.

Should the indications arise, through the onset of constitutional symptoms, during the conduct of the case, strychnine and other stimulants should be administered hypodermically and from sixteen to thirty-two fluid-ounces of sterile normal salt solution introduced by hypodermoclysis or high rectal injection.

Four cases, an outline of each of which follows, have been selected as fairly illustrative of cervical tears:

CASE 1. Date Sept. 10, 1905, age 26. Primipara. Forceps were applied at the brim. During delivery there occurred several lacerations of the cervix, two of which extended well up the vaginal attachment, and also an extensive tear of the perineum and lower vagina. From both of these injuries there was considerable oozing, but a careful examination failed to show any arterial hemorrhage. A drachm of ergot was given and both the uterus and vagina firmly packed with plain sterile gauze. These measures controlled the bleeding and on the following day the packing was removed and the perineal laceration repaired under local anesthesia. Recovery.

CASE 2. Date May 11, 1907, age 23. Primipara. An occipito-posterior case arrested in mid-pelvis. Forceps were applied, flexion restored and the head delivered. There were produced a laceration of the lower vagina and perineum extending into the rectum and a bilateral tear of the cervix well up to the fornix. Bleeding from the lower wound was quite free, but only slight from the cervix. While the patient was still under the anesthetic, the rectal, perineal and vaginal sutures were laid, the placenta delivered by Crede's method, and the uterus and cervix packed with gauze. After securing the sutures, a vaginal tampon was introduced. Recovery.

CASE 3. Date July 11, 1907, age 32. Two normal labors; both children living, one miscarriage. I was called to this case by my friend, Dr. Stewart. It was a case of eclampsia in the seventh month of pregnancy, requiring artificial dilatation of the cervix, version, and rapid extraction of the fetus. During delivery an extensive bilateral laceration of the cervix was produced. Having excluded undue bleeding from the body of the uterus, a more complete examination with speculum and volsellum forceps showed that the wound on the right passed to the vaginal attachment only, but on the left extended well up into the retraction ring and from it came a true arterial hemorrhage. The body of the uterus, both angles of the tear, and the vagina were firmly packed with gauze and the patient put to bed. In a comparatively short time the blood had thoroughly saturated the tampon and, in spite of it, was flowing from the vulva in a steady stream, while constitutional symptoms were becoming manifest.

The patient was returned to the table and both sides of the laceration repaired in the manner described under treatment, followed by tamponade of the uterus, cervix, and vagina. Recovery protracted.

CASE 4. Date Aug. 12, 1907, age 33. Premature labor in October of 1905, which was a L. S. P. case; child living. Forceps were applied at the brim. After delivery of the child, and before birth of the placenta, the character of the bleeding gave warning of a serious cervical tear and this was confirmed by a digital examination. The placenta was delivered by expression. The cervix was brought down with long volsellum forceps and a tear disclosed extending but a short distance on the left, but on the right passing well up into the contraction ring and opening the base of the broad ligament. From it came a steady flow of arterial blood.

I was caught at this case without a speculum and while one was being procured, the uterus, tear and vagina were firmly packed. By the time the repair could be begun, marked constitutional symptoms had appeared, and blood was flowing steadily from the vagina.

Normal salt solution was administered, and the laceration was sutured, as described

under treatment, and the entire canal tamponed. A perineal laceration was also present and was repaired at the time. Recovery protracted.

CONCLUSIONS.

I. Lacerations of the cervix may properly be considered as of two types: (1) Those of the infra-vaginal portion which do not give rise to serious bleeding and are best left to nature, or, if oozing is free, treated with the gauze tampon; (2) Tears which have their origin at, or extend into, the retraction ring, involving the uterine or circular artery and causing hemorrhage of a most persistent nature.

II. Cases of this latter class seldom, if ever, occur where expulsion can be left to nature, but on the other hand are probably frequent in certain artificial deliveries.

III. Packing, alone, is inadequate to control the hemorrhage and immediate suturing is demanded.

IV. Prompt and accurate diagnosis of the source of the flow should be made in all cases of undue post-partum bleeding.

V. Time is an important factor, and, had repair been undertaken a little earlier, cases 3 and 4 could have probably both been spared a protracted convalescence.

The Conveyance of Whooping Cough.¹

—Macewen concludes his very interesting paper with the following conclusions: 1. Whooping cough is beyond doubt an infectious disease. 2. The specific virus is contained in the sputum, or vomited material, or both. 3. Infection may take place either during the process of swallowing or by ingestion of the infective agent. 4. Cats are susceptible to whooping cough, and may therefore occasionally be the means of disseminating the disease.

¹H. A. Macewen, *British Med. Jour.*, Jan. 18, 1908.

TRICHINOSIS OF THE UPPER RESPIRATORY PASSAGES. WITH REPORT OF CASES.⁽¹⁾

BY

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Before reporting the cases which form the body of this paper, I would ask your indulgence to review tersely a few of the facts relative to the pathology of trichinosis.

The parasite was first observed in human muscle by Peacock in 1823, by Owen in 1835, and in the hog by Leidy in 1847, but it was not until 1860 that these observations were set forth as a clinical entity by the brilliant work of Zender, Virchow and Leuchart.

The trichinae spiralis in its adult stage may inhabit the intestines of any carnivora. It is there introduced by eating meat containing encapsulated larvae. The capsule is dissolved off by the gastric juice, and the parasite escapes into the upper intestines where it becomes adult. Here the female is impregnated, burrows into the lymph spaces of the intestinal wall, and there deposits her young to the number of about fifteen hundred.

Through the blood stream the young brood is distributed to the entire body, but the conditions necessary to their development are found only in the transversely striated muscular system. Ten days from the time of infection, the young have reached their destination.

The trichinae are not evenly distributed, having a predilection for the muscles of respiration, due possibly to the rhythmic

contractions of these muscles. The encysted trichinae remain alive for many years; in the pig, eleven, and in man thirty years.

Man's source of infection is raw or insufficiently cooked meat—usually pork. The ordinary culinary processes do not protect against infection from trichinae. Valin observed that a ham boiled for three hours contained live trichinae in its center.

About 6% of the pork used in this country is infected. A very interesting fact was brought out by H. U. Williams of Buffalo University. He examined 505 human bodies for trichinae. In 5.1% of these trichinae were found.

REPORT OF CASES.

CASE I. Mrs. E., aged 68, Scotch by birth. I was called by Dr. L. C. Begg to do an intubation for a gradually increasing laryngeal stenosis. Patient was propped up in bed, breathing was labored. Face was slightly cyanotic, pulse 140, temperature 101. A persistent, hard, dry, hoarse cough added to the respiratory embarrassment. There was supra-clavicular and epigastric retraction during respiration. Inspiratory stridor could be heard over the chest with here and there some crepitant rales. First cardiac sound short, weak and muffled, but rhythmic. Pharynx showed oedema of the soft palate and lateral walls; mucous surface was dark in color, but did not show much surface inflammation. Deglutition was very painful. The laryngeal mirror showed edema extending down the lateral walls and over the epiglottis. The oedema in the upper laryngeal region completely obscured all view of the parts below. The macroscopic appearance of this edema resembled more that due to passive congestion than to an acute inflammatory condition. There was a hard edema of the skin of the face, neck and chest, more marked in the upper lids. This was accompanied by intense itching over the parts affected. Movements of the neck, face, jaws and tongue were painful. The patient was in a semi-stupor and resented examination. The pupils were normal

¹Read before the Academy of Medicine—Section on Laryngology and Rhinology, Jan. 22nd, 1908.

abdomen slightly tympanitic — spleen not felt. Liver dullness normal. Urine normal in quantity, a trace of albumen. Sp. gr. 1010. Diazo reaction present. An adrenalin spray was used with steam and an active purge given. Ice was applied to the neck.

Patient noticed first symptoms about one week prior to my visit (July 23) and ten days after eating ham. She complained of malaise, intense headache, diarrhoea, muscular pains, weakness, chills and severe dry cough—temperature ranged from 99 to 103 with remissions. There was hyperaesthesia of the skin over the face, neck and chest, and painful respiration. The pain was referred to the epigastric region. The pectoral and neck muscles were tender on pressure. The laryngeal edema subsided gradually so that in three days from my first visit, or on the 11th day of the disease, patient could phonate in a hoarse voice. The cough persisted for one week longer. It was constant, dry and painful, and resisted all effort at relief. Patches of bronchopneumonia were distributed through the lungs. Temperature reached normal on the 16th day of the disease, the pulse remained above 120 while under observation. Patient now reports that she has not regained her former health. Her heart remains weak; hoarseness, cough and generalized muscular pains persist.

CASE II. Miss E. H., aged 32, daughter of patient No. 1, became ill about July 24th, with loss of appetite, weakness, malaise, vomiting and muscular pains. The throat became dry and sore, deglutition painful about the fourth day of the disease and the voice grew husky. Swelling of the face, eyelids and skin over the chest and hyperaesthesia were noticed on the first day.

Examination: Patient spoke in a whisper, articulation was thick and with evident pain. The eyelids and face showed pale edema and on the chest there were hyperaemic spots tender on pressure. Movements of the shoulders, arms and neck caused pain. A painful cough, dry and persistent; headache, vomiting, pruritus of the face, neck and chest, and swelling of the tongue were the chief complaints. The pharynx was edematous, but not markedly red. The larynx showed oedema of the arytenoids and false cords. The true cords

were scarcely distinguishable from the surrounding swollen tissue. Chest examination was negative. The urine showed nothing unusual; the bowels were constipated throughout the illness. Pulse ranged from 99 to 102 during the first week, fell to normal on the twelfth day, with subsequent slight rises. The pulse remained above 100 while under observation. Complete recovery occurred in about seven weeks.

CASE III. Mr. H., aged 24, boarder in the house of the above patients. Was taken ill July 26th. His only complaints were sore throat, pains in the muscles of the neck, and headache with general weakness. Temperature and pulse were normal. At the onset he had diarrhoea for one day; he did not go to bed. The pain on swallowing and on phonation was out of proportion to the appearance observed, the condition resembling more an ordinary rheumatic throat than anything else. The voice was harsh, true cords and arytenoids were slightly congested. These symptoms persisted for nearly three weeks.

I must admit that for some time we were completely at sea as to the nature of the infection in these cases. It was evidently the same in all of them. Cultures from the larynx and pharynx gave no light. Widal was negative. There was a leucocytosis of 20,000 in case No. 1, 16,000 in case No. 2. Finally at the end of the second week (and at the suggestion of Dr. Evan Evans) a differential count was made, showing an eosinophilia of 48% in case No. 1; 30% in case No. 2, and 25% in case No. 3. A piece of muscle taken in case No. 1 did not show the trichinae.

CASE IV. Miss W., German, aged 16, first seen in my office in June for tuberculous cervical adenitis. She was put on treatment and told to return in September. On September 16th she again came under observation. She had lost in weight and was markedly anaemic. The glands were beginning to soften. Operation on September 19. The dissection was extensive, and involved cutting the edge of the trapezius muscle. The cut muscle was studded with minute, grayish white specks, looking like tubercles. A piece was removed and examined by Dr. Philip Horwitz. The specks were found to be trichinae in the

encysting stage. This patient lived in the same block as cases 1, 2, and 3. Her infection, from the history elicited, occurred in the early part of August. All these cases gave a history of eating ham bought in the vicinity at a delicatessen store on Third avenue.

My object in reporting these cases is to call special attention to the involvement of the upper respiratory passages. Nowhere in the literature have I found a case of this disease threatening life by asphyxia, though Chatin in an extensive review of the subject states that asphyxia is possible.

In cases 1 and 2, the throat symptoms predominated. The nature of the condition in case 3 would have been entirely overlooked had it not occurred in conjunction with the others. Case No. 4 is mentioned only to authenticate the other three cases, as here trichinae were found and a common source of infection in all the cases established.

Osler reports bleeding from the nose in two instances in cases simulating typhoid. Involvement of the laryngeal and pharyngeal muscles is mentioned by all the pathologists, in the lower animals.

The condition observed in the throat and larynx of my cases did not show an acute surface inflammation. It looked more like passive edema. Redness was not a marked feature. The dysphagia was not due to surface soreness, but to deep-seated muscular inflammation similar to that observed in bad cases of rheumatic pharyngitis. This dysphagia was present in three of my cases.

Dyspnea, if present, is generally due to involvement of the respiratory muscles and not to laryngeal stenosis. Cyanosis may be present without laryngeal obstruction. Lingual myositis was present in case 2 and produced thick and painful articulation.

DIAGNOSIS.

The diagnosis in sporadic cases is very difficult. Its rests upon multiple myositis; facial edema (notably of the eyelids) typhoid conditions in bad cases; eosinophilia with leucocytosis and upon the determination of trichinae in the muscles. In mild cases, the condition will be overlooked, unless a differential blood count is made.

The treatment is symptomatic.

CONCLUSIONS.

If trichinosis occurs in 5% of man then it must be generally overlooked, or the invasion must be too mild to attract attention, as the number of observed cases is vastly out of proportion to the post-mortem findings.

Since in a moderate number of the cases observed, the upper respiratory passages are involved, is it not probable that throat trichinosis is more common than we have hitherto believed, and has it not generally been mistaken by us for something else?

As I have shown, our ordinary culinary methods do not protect us against this infection.

In doubtful or peculiar, acute or sub-acute inflammation of the pharynx and larynx, a differential blood count should be made.

The presence of eosinophilia is not an absolute proof of trichinosis, but it is the strongest evidence we have, excepting the finding of the cysts.

Extracapsular Fracture of the Femur.—In extracapsular fracture of the femur there is severe pain, pressure upon the great trochanter is very painful, swelling and ecchymosis are marked; there is absolute inability on the part of the patient to move the limb and passive movements cause violent pain; there is shortening to the extent of at least one and one-half inches, and sometimes to the extent of three inches.—*Da Costa.*

**HEADACHES IN INFANCY; THEIR
CAUSE AND TREATMENT.⁽¹⁾**

BY

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Dana defines headaches as diffuse pains caused usually by irritations located or referred to the peripheral ends of the fifth nerve. Infants and children differ from adults in size, stature, strength, experience and in the immature development of their brain and various organs. With the gradual enlargement of the bony skull, we find the structural development of the child's brain more rapid than the functional. In the fetal brain the individual cells are distinct and separate from each other. They must first undergo a process of elaboration, in other words they must bud out and branch. The earliest movements of a child are reflex and not the result of activity in the higher cerebral centres. As the brain develops each stage is marked by nerve medullation. The fibres of the cord, medulla oblongata, pons varoli, and corpora quadrigemina are the first to obtain their myelin sheaths and, therefore, they functionate before the higher cerebral centres.

Headaches, therefore, imply an understanding of what pain means to the child. Rachford thinks that headaches in consequence are uncommon in children under five years. I think he places the age too high as certain children mature more quickly than others. He thinks that under this age we should look to some aural or intracranial organic diseases as causative factors.

Headaches in children last for weeks but rarely for months. Some are constant as seen in those suffering from persistent anaemias or leukemias, dyspepsia, rheumatism, subacute or hidden forms of syphilitic manifestations and of meningitis in its different forms. Others are inconstant, as neurasthenia, and ocular conditions; although neurasthenia and nervous exhaustion may lead to persistent headaches for months which are worse in the day time but disappear at night.

Chronic headaches are rarely seen before puberty and then they predominate during the beginning of the catamenia in the female.

Let me forcibly bring to your notice that little patients should be thoroughly examined from head to foot, nose, pharynx, mouth, ears, eyes, chest, abdomen, and skin, and no medical attendant should feel satisfied without such an examination, the child being absolutely exposed. Faulty nutrition of the nerve cells lead to retardation of mental and physical growth. Of the many conditions predisposing to headaches we find heredity probably in the lead, for neuroses, neurasthenia, gout, dipsomania, migraine, rheumatism, hysteria, epilepsy, nervous instability and venereal diseases in the parents all exert a powerful influence upon the delicate protoplasm of the cells of the offspring. Again we find headaches arising from malnutrition and consequent anaemias, as from lues, tuberculosis, gastro-intestinal toxæmias, auto-intoxications, from rheumatism, acute and subacute, from constipation, malaria, bad hygiene and bad food.

Overwork giving rise to neurasthenia, and mental strain at school in young as well as older children bring, about exhaustion and functional incapacity of nerve

¹ Read before the New York East Side Physicians' Association, June, 1907.

centres. The menstrual period often shows us fearful headaches in girls.

Reflex headaches due to eyestrains, toxic headaches due to alcohol, arsenic, lead and phosphorus given often by untrained attendants, uremic headaches from nephritis in some form, as well as neuralgic conditions are all seen by the pediatricist. We also have numberless types of headaches from gastro-intestinal conditions.

The most common seats of pain are, first, the frontal region; second, the fronto-occipital; third, the parietal-temporal; and fourth the occipital region. We find pulsating headaches in migraine; dull headaches in dyspepsia; pressing headaches in neuroses, hot headaches in rheumatism, and boring headaches in hysteria. Finally, most of these headaches seem to appear in the seasons of Spring and Autumn.

TREATMENT.

In the treatment of headaches we must at all times remember that the amount of energy developed in a nerve cell and its subsequent discharge will directly depend upon the amount of healthful chemical metabolism going on within the cell. Therefore, the organs of our little patients must be able to perform their various functions before the children can be brought back to health.

Infants and children are not undersized adults nor can they be treated as such. They are in a class by themselves. Food should be of the plainest, given at regular intervals, and if milk, pasteurized or un-pasteurized depending on the child's age. Eggs and meat should be limited, in fact the latter should be rarely given under five years. Drugs in small limited doses, one at a time, controlling the severest existing

pathological lesion should be given. Each condition which arises should be combatted by its own antidote as mercury or the iodides in lues, but more faith should be pinned upon hydrotherapy, diet, fresh air and mild tonics such as cod liver oil, malt extract and the like.

In every case a child's absolute good will and confidence must be gained before a positive cure can be assured.

118 W. 80th St., New York City.

A PRELIMINARY REPORT OF THE TREATMENT OF PERTUSSIS WITH DIPHTHERITIC ANTI- TOXIN.

BY

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For the treatment of whooping cough various remedies have been advised from time to time but as a rule, only a slight amelioration of the symptoms, at best, has been the result and in many cases especially the more severe ones, no benefit at all has been received.

It may be that when the germ which causes the disease is discovered a specific antitoxin will be produced for its treatment.

But until that time comes I believe we have at our command a serum which will prove a great blessing to those who suffer from this trying and not infrequently fatal malady.

I want to give the profession my experience with an old and tried remedy, yet new so far as I know, in the treatment of this disease. In the fall of 1906 I was called to see a patient whom I found was suffering with diphtheria. He was one of a family of six or seven children.

I immediately administered a dose of antitoxin and isolated him. At the same

time, following my custom under these circumstances, I advised immunizing doses for the other two small children, to which the parents consented. I gave them each five hundred units.

It so happened that the little girl about three years of age and another brother aged six years were suffering with whooping cough. The little girl would have as many as fifteen paroxysms during the twenty-four hours, in many of which she would become so asphyxiated as to compel her mother to dash cold water in her face to restore her. The brother's case was not so fully developed.

The second day after administering the antitoxin when I made my call I asked the mother how the little girl was getting along. She told me that she had not coughed so frequently nor so hard the previous night.

The next day when I made my usual inquiry the mother, delighted, told me that her little girl had only one or two paroxysms during the night and they were very much milder.

The little girl rapidly improved in every respect and the paroxysms of coughing ceased entirely in a few days. It is to be remembered that this child was not taking any other medicine.

Her little brother to whom I also gave an immunizing dose did not develop a severe case at all. In fact he had no paroxysms after that, only an occasional cough.

Acting on the suggestion which these two cases offered I used it in six or eight other cases of fully developed whooping cough with the same happy results.

Wishing to have someone else try it I told Dr. W. C. Gayley of Hazelton, Pa., of my experience in the foregoing cases.

He happened to have several severe cases of whooping cough at the time, one of which in particular he said could neither retain food nor medicine. He gave her the antitoxin and in three or four days afterwards she retained her food, the cough ceased, she began to improve in every respect and rapidly recovered.

He was so highly gratified with the result in the first case that he tried it in three or four others which yielded in the same way. Dr. Gayley, however, suggested that the full dose of antitoxin would act more promptly and completely which fact I have since found.

In these dozen or more cases which I have noted the diphtheritic antitoxin gave such satisfactory results that I give this preliminary report to the profession in the hope that they will try it in a sufficient number of cases to prove it as much of a specific in pertussis as in diphtheria.

The Treatment of Deafness, due to Adhesions in the Ear.—In the treatment of deafness, due to adhesions in the ear, Lermoyez and Mahn, (*Revue de Thérapeutique*) make use of the following:

R	Thiosinamini,	3iv.
	Phenazoni,	3ij.
	Aq. distill.,	3iiss.
	Misce. Ft. lotio.	

An ear-bath (hot) of this solution is given every evening, and the membrana is massaged twice a week.

Gastric Ulcer.—Profesor Senator of Berlin uses nothing but gelatine in the treatment of gastric ulcer. His formula is:

White Gelatine,	50 grammes.
Sugar and Oil of Fennel,	aa q. s.
Water,	450 grammes.

A tablespoonful every three hours or more frequently.

A PRELIMINARY REPORT OF SIXTEEN CASES OF PULMONARY TUBERCULOSIS TREATED BY NEW AND PHYSIOLOGIC METHODS WITH UNUSUALLY SATISFACTORY RESULTS.⁽¹⁾

BY

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In presenting this preliminary report upon the treatment of pulmonary tuberculosis, I do so first for the reason that the treatment if it possesses any virtue, should be known; and second, if my premises are wrong, then the results obtained are fallacious, and it should likewise be known. At any rate from a mutual interchange of opinions and a free discussion of the subject we either may arrive at the long-hoped-for cure for pulmonary tuberculosis, or together can again share that same disappointment we all have felt so many times.

For our purpose it will be all sufficient to say that there are two main channels for infection; the one through the inspired air, the other through the gastro-intestinal tract. We must also admit predisposing causes such as heredity and environment; at all events we have tuberculosis usually taking place as the result of these conditions either in or around the neighborhood of joints, the glandular system, the skin or the apices of the lungs. It should be observed here that the regions and tissues just enumerated are those in our economy where the least blood circulates, just as though the bacilli possessed a predilection for blood-poor areas. For the past few

years I have had the good fortune to observe a large number of tubercular joint lesions and enlarged tubercular glands. The results obtained in these cases by means of the X-ray is history and does not require verification. There is one point of interest however that we ought not to lose sight of in the X-ray treatment, the lesions respond according to the amount of reaction produced in the diseased area. This reaction by the tissues is *analogous to inflammation*, and inflammation never takes place without some increase in the local blood supply. It is rather noteworthy, then, that in the first place, the lesions occurred in blood-poor areas, and when these areas have their blood supply increased the lesions disappear.

Some three years ago this forced us to make use of passive hyperaemia in all joints under X-ray treatment and as a result the lesions healed in about one-half the time that they had previously, showing that an increase in the local blood supply was not conducive to the general welfare of the tubercle bacillus.

We were also led to believe that perhaps this local increase in the blood supply was all that was necessary and, therefore, discarded the use of the X-ray, but it was only a short time before we discovered that the X-ray stimulation was an essential part for without this the time again lengthened. so that to-day we make use of passive hyperaemia plus the X-ray exposures. I have seen patients whose local joint lesions cleared up entirely, yet who succumbed in time to pulmonary tuberculosis. In lupus vulgaris the same method of treatment is employed and only the slightest amount of reaction to the X-ray is necessary plus the induction of passive local hyperaemia. We have, therefore

¹ Read before the Clinical Society of the Polyclinic Hospital, Jan. 6, 1908.

practically a specific for these two forms of tubercular lesions, but the X-ray is not the only means whereby we can arouse the necessary reaction, for injections of tuberculin will act in a similar manner. It will be observed that in neither of these tubercular conditions have we paid any attention to the tubercle bacilli, nor is it necessary. I am not over-stepping the mark when I state as my positive conviction that the less attention we give to the bacillus the better will be the results of our therapy. Pulmonary tuberculosis is with us, always has been, but I hope it will not always be so.

I have already stated that the tubercle bacilli prefer blood-poor areas. Contrary to general belief even in the lungs we have blood-poor areas; these are in the apex of each lung. The bronchial artery is the nutrient artery for the lung structure. This, we know, follows the bronchial tubes dividing and re-dividing until finally lost in a capillary network. Non-use of any organ or part of an organ soon leads to functional as well as anatomical atrophy with a corresponding loss in the blood supply. This condition we find in both apices of the lungs, consequently they become vulnerable points for the tubercle bacilli to find lodgment. The bacilli having gained lodgment either through the inspired air or the gastro-intestinal tract, usually produce the stereotyped symptoms of pulmonary tuberculosis.

The diagnosis is made and treatment instituted. Some patients are sent to the seashore, some to inland lakes, some to higher altitudes, some to foreign lands, some to sanatoria, some to camps to lead an exclusive outdoor life, some are required to rest absolutely, some build up their systems by exercise, some take large quantities of food, some follow the starvation method,

some are ordered to take fresh milk, some take soured milk, some take proteids in abundance, some live entirely upon a vegetable diet, some take drugs, some no drugs at all. The final result, however, is that no matter where the patient goes or what he does, some get well but more, many more, succumb to the disease. Upon the autopsy table we find both sexes well advanced in years with unmistakable signs of early tubercular lesions, completely healed, in all probability never suspected. Something has healed these lesions and that something we must find if we ever hope to cut down the terrible mortality of this well named "white plague." The man who wrote the words "the white plague" indeed wrote better than he knew, for not only does anaemia of any part offer an especially suitable soil for this bacillus, but the bacillus or its toxins produce a negative chemotaxis in the region it invades and thereby actually causes anaemia. It is, therefore, necessary first of all to change this negative chemotaxis to a positive one. A foreign body within the tissues is just as much a foreign body whether it be a rifle bullet weighing several ounces or the bacillus of tuberculosis requiring an oil emulsion lens to make it visible. Only one of two courses is open for the foreign body. It will remain in the tissues, becoming completely walled off with no harm resulting from its presence, or it will become an active source of irritation and danger. At any rate the foreign body and living tissues cannot dwell peaceably together on equal terms, one must be the conqueror, the other the conquered.

It seems to be an established fact that under certain favorable conditions the blood or the serum possess all the necessary factors to cope with all the ills that the

flesh is heir to. The idea, therefore, is not a new one, that if the lungs are subjected, like other parts of the body, to active or passive hyperaemia we can hope for a cure in cases of tuberculosis where an abundance of blood supply is so essential. This belief has been further strengthened by the fact that whenever we have a heart lesion with a tendency to pulmonary congestion, no tubercular lesion is found in the lung.

If we apply the simple law of physics "that no two bodies can occupy the same space at the same time," to a tubercular patient, we can have an abundant blood supply in the lung by simply depriving the extremities of their share for the time being. When the surgeon prepares an extremity for a bloodless operation by applying from the distal to the central end an Esmarch bandage, the blood is certainly not in the extremities so prepared, wherever else it may be. When all four extremities are so prepared and the blood is not in them, it must be somewhere else. The great splanchnic area and all the internal organs are for the time being in a state of passive hyperaemia. The quantity of venous blood passing through the lungs for aeration is not at all thereby increased, but the arterial system having its area materially decreased contains, in the pulmonary area, perhaps 4 to 500% more during this time.

This, then, is the secret of the cure of tuberculosis, no matter what brings it about, whether lung gymnastics in higher altitudes or practised at home by the trained patient, or the stimulating influence of inhaling the cold outdoor air for 24 hours each day, or the increase of the general bulk by forced feeding, or by strenuous exercise leading to cardiac hypertrophy; somehow in each form of treatment it is

the increased blood supply which either furnishes the means of destroying the bacilli or so aids in walling them off that they become innocuous.

Two years ago one patient was put rather cautiously upon such a treatment. That patient is well and does not show the slightest sign of pulmonary tuberculosis to-day. Emboldened by success, six months later two patients were put upon a similar course of treatment, one a blacksmith who promptly died during the first week with a hemorrhage lasting three days in spite of all that could be done. This patient, it is fair to say, however, had suffered from previous hemorrhages. The other a stone cutter, while early in the treatment suffering a great deal from epistaxis, is apparently well to-day, having gained 24 pounds in weight, or two pounds more than he ever weighed before.

The technique which was rather crude soon became improved with experience and two more patients both females, were subjected to the treatment. Both patients having gained in weight, one shows not the slightest sign of ever having been tubercular, the other of rather delicate build, while giving a great deal of trouble, with frequent but small hemorrhages during the first three weeks, now runs no temperature, does not cough, appetite and digestion are good and although she has gained but nine pounds in one year, feels very well.

On July last a young man, 18 years old, a farm laborer, with upper lobe of right lung involved was put upon a similar treatment. During the first two weeks he suffered from daily epistaxis, since then he has made an uneventful recovery. On January 2nd, 1908, or six months from the beginning of his treatment, he was weighed and found to have gained 18 pounds. He

feels well, has had no cough for the past four weeks, no temperature, and beyond a localized flatness on percussion there are no signs of tuberculosis.

These six constitute all the private cases, four perfect recoveries, one greatly improved, and one sudden death. During the last fourteen months 10 additional cases were treated with a much improved technique. These were all institution cases and the treatment could be carried out almost faultlessly. Of these ten cases, all females, four have recovered completely, and the least gain was 16 pounds, the greatest 28 pounds. These four have since been removed from the ward. Four others are progressing to what appears to be certain recovery, while three have only lately been put under treatment, but from all signs are responding perfectly.

The latest case is of unusual interest and bears describing in detail. Sister A., 28 years of age. Five years ago was operated upon at St. Catherine's Hospital, Brooklyn, for tubercular cervical adenitis. Three years ago new glands had formed on the same side. She was then brought to my office and the glands treated with the X-ray. All signs disappeared, until 2 years ago, when either the same glands again enlarged or new ones become involved. The patient was again treated with the X-ray with perfect results. About one year ago she began to lose weight and to decline; the hospital report stated that the blood contained malarial organisms in abundance; she was treated but failed to recover and was then sent to Monticello, Liberty Co., N. Y., without beneficial results. She returned to the institution last August. She was at once placed in the tubercular ward. Examination showed a doubtful state of the lungs but very positive signs of tubercular peritonitis; menstruation had ceased about five months previously; the abdomen was distended with gas and fluids and was painful; temperature 102-4. There was marked wasting of the whole body, great loss of appetite and irregularity of the

bowels. The glands in the cervical region on the side treated with the X-ray had never reappeared but there were enlargements present on the opposite side of the neck. This patient was the first one of this kind with serious glandular involvement subjected to the treatment and strange to say she is recovering with marvelous speed. The abdominal distension has entirely disappeared, all of the fluid is absorbed, she eats well and is gaining daily in weight and strength.

The following is the routine treatment for every patient in the ward, with modifications to suit each case.

Seven to eight A. M., a full bath, 3 to 5 minutes; the water for the first week is 84 degrees, this is reduced 2 degrees each week until a temperature of 64 degrees is reached, where it remains stationary. The patient is rubbed dry and put to bed for one hour when breakfast is served.

At 10 A. M., bandaging begins, a rubber Esmarch, 2 inches by four yards, is applied with moderate firmness, but without discomfort, to all four extremities. These bandages remain on from fifteen minutes to one hour, with the foot of the bed elevated about two feet. They are removed for at least two hours when the process is repeated up to 6 P. M. While the bandages are in position, patients inhale for two to five minutes free iodine in albolene from a nebulizer.

Five to six P. M., as long as patient shows temperature, a wet sheet pack until perspiration shows upon the forehead.

Before retiring a rectal douche of at least two quarts of cold water; if necessary, soap may be added.

Diet:—Whatever in the previous experience of the patient has been shown to agree best with them is permitted; the amount is regulated by the appetite only; green, uncooked foods such as celery, lettuce,

chicory, fruits and nuts are allowed *ad libitum*. Patients however, are instructed to take only enough fluids to quench their thirst.

As soon as patients are convalescent, they are treated for fifteen to thirty minutes daily upon the auto-condensation couch with the high frequency current of D'Arsonval.

The patient with abdominal involvement has a cloth wrung out in cold water placed over the entire abdomen and changed every fifteen to thirty minutes during the day.

The temperature in the room is kept at 68. The upper $\frac{3}{4}$ inches of all the windows open, rain or shine, unless the weather is too cold.

This is a general outline of the treatment. The morning bath is not for the temperature but for the tonic and hardening effect. It has also been shown that such a bath increases the leucocytes 3-400 per cent. It contracts the capillaries of the skin and sends the first rush of blood to the internal organs, much the same as in the Brandt system in typhoid fever.

The bandaging has been sufficiently explained.

The inhalation of the iodine is for the purpose of setting up a counter-irritating effect in the lung structure similar to that which is gained when tuberculin is injected.

The wet sheet pack assists the body in removing large quantities of toxic material through the skin; this is shown by the discoloration of the sheets used, as well as by the odor present, and, incidentally, it is a good and harmless antipyretic.

While the entire treatment is simplicity itself, close attention to detail seems to be an important factor to a successful issue.

1239 Madison Ave., New York City.

An Aid in Controlling the Paroxysms of Whooping Cough.—A broad, elastic belt, worn by a child suffering from whooping cough, will moderate the paroxysms of coughing and will often entirely prevent vomiting. Kilmer advises a linen belt, in which there is a small section of silk elastic, to be made 4- to 5-inches broad for infants and 5- to 8-inches broad for children.

Baldness.—The following, according to *La Tribune Médicale* is recommended for baldness:

Tincturæ cantharidis,	ʒi.
Balsami Peruviani,	ʒiiss.
Olei rosmarini,	mxxx.
Ceræ albæ,	ʒiiss.
Petrolati,	ʒiiss.

M. et sig.: Rub a small portion daily into the bald scalp.

To Evert the Eyelids of Children.¹—To evert the eyelids of a child Vail recommends the following method: The surgeon sits with the child's head lightly clamped between his knees, the child's body in the lap of the nurse sitting close by in a chair, and the child's hands held by the nurse. The feet are allowed to kick free. The entire finger nail of the left index finger is placed on the lower lid and the finger crooked so that the pulp of the finger tip will just override the edge of the lower lid; then the upper lid is gently pushed downward by means of the index finger of the right hand placed at the upper tarsal rim, until the free border of the upper lid overrides the pulp of the finger tip of the left index. Maintaining the pressure with the right index finger when this position is effected the upper lid is turned inside out by simply keeping the free edge of the upper lid against the pulp of the index finger of the left hand. The right hand is now free to use in everting the lower lid. Having everted the upper lid, the lower is easily everted by making pressure downward with the right thumb.

¹D. T. Vail, M. D., Jour. of Ophthal and Otolaryng, Dec., 1907.

**CONGENITAL DEFORMITY LEADING
TO ERROR IN DIAGNOSIS.**

BY

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This radiograph is a beautiful illustration of an error in diagnosis.

Boy, 20 years old, secured employment from a corporation. Worked only one day, when, owing as he stated, to a defective ladder he fell. No one saw the fall. He applied immediately to the foreman, stat-

and then was unable to reduce the deformity. The arm was bandaged and the next day the boy was sent to me for examination. On first inspection, of course, I detected the deformity, but there was absence of symptoms due to traumatism. There was no swelling, and no actual tenderness, although the boy tried by facial expressions and statements to make me believe that he was suffering intense pain. I examined the wrist carefully and made no effort whatever to reduce the deformity, but immediately had an X-ray taken, band-



X-RAY SHOWING CONGENITAL DISLOCATION.

ing that he had fallen on account of the defective ladder. There was a slight bruise on the palm of his thumb and a marked deformity of the wrist. The boy complained of considerable pain and stated that he could not bend the wrist. The foreman immediately sent him to a nearby surgeon who diagnosed dislocation of the wrist and attempted a reduction. Not succeeding he placed the boy under anaesthesia

aging up the boy's wrist and telling him to return in a couple of days.

The radiograph made a positive diagnosis. It was found to be a congenital deformity and was used by the boy to, if possible, extort money from his employers. Suit was threatened in this case, but after a thorough understanding with the boy and those interested in him and a full explanation of the

radiograph, suit for damages was abandoned.

The picture is a most beautiful illustration of a condition which might be taken for an acute traumatism.

616 Madison Ave., New York City.

THE CLINICAL SIGNIFICANCE OF PAIN IN THE EPIGASTRIUM.⁽¹⁾

BY

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While epigastric pain is most frequently due to stomach disease, it is well known that in disease of other abdominal and thoracic organs, and in disease of the spinal cord and vertebrae, pain is very often referred to the epigastrium.

The pain of uncomplicated hyperchlorhydria, or gastric ulcer, is fairly typical. In the former condition, which is the most common cause of pain in this region, the pain comes on from half an hour to two hours after eating, depending on the character and quantity of the food, lasts a few hours, or until something more is eaten, and it is usually relieved by taking an alkali. There is less pain, as a rule, after large meals, particularly after meals composed mainly of eggs, milk, meat, etc., than after meals containing a large amount of carbohydrates. The pain is diffuse, of a burning character, and extends over the whole gastric region in contradistinction to the localized pain of gastric ulcer. Gastralgic attacks are prone to occur in both hyperchlorhydria and ulcer. Hyperchlorhydria is usually met with in neurotic, emotional individuals. Not all cases with an exces-

sive hydrochloric acid secretion complain of symptoms; whereas patients with gastric hyperesthesia and a normal or subacid gastric secretion may complain of symptoms simulating those of hyperchlorhydria.

The most important symptom of ulcer of the stomach is pain which has several important characteristics, in that it appears after eating, is influenced by the character of the food, is circumscribed to a small area in the epigastrium and is usually relieved by vomiting or when the stomach is empty. The painful area in gastric ulcer can frequently be mapped out by percussion, especially if the ulcer is situated in the anterior wall of the stomach. The pressure of the clothing causes distress and women not infrequently leave off the wearing of corsets. Occasionally the patients complain of a dull, disagreeable feeling in the epigastrium, and instead of the pain occurring in paroxysms at the time of digestion, it is continuous. Continuous pain indicates some complication, as peritonitis, adhesions, continuous secretion of gastric juice, etc., and does not speak for simple ulcer. As a rule, the pain of ulcer appears earlier than in cases of uncomplicated hyperchlorhydria. Some patients suffering from ulcer are afraid to eat on account of the pain caused thereby; however, the majority of those who are afraid of pain caused by eating are usually neurotic and not ulcer victims. Although the pain of ulcer is usually limited to the gastric region, it may also radiate to the back or still further. Acute ulcer of the stomach may occasionally give rise to pain or cardialgic attacks only at intervals of varying length from a few days to several weeks.

Peritonitic adhesions may be a cause of continuous pain or the pain may be experienced only when the stomach is full or when the patient occupies certain posi-

¹Read at the 1907 meeting of the Pennsylvania State Medical Society.

I had recently under my care a patient with perigastric adhesions following a perforated gastric ulcer. The patient bent forward, being unable to stand erect owing to the pain caused thereby.

Pain of duodenal ulcer in many cases is in every respect similar to that of a gastric ulcer. This can be readily understood as the majority of ulcers in both instances are located near or involve the pylorus. In some cases we may be able to diagnose a duodenal ulcer by the seat of the greatest pain and tenderness to the right of the median line in the epigastrium along the vertebral column and that the pain occurs later than in ulcer of the stomach. In other cases pain may be absent or so slight that the patient does not pay any attention to it, or there may be only indefinite sensations of tension, pressure or sensitiveness to pressure in the epigastrium. On the other hand, there are instances in which the patients suffer from violent paroxysms of pain, or the pain may be severe and continuous, made worse by movement of the body, after eating, on pressure, etc. A feeling of hunger, gnawing or boring may be present.

The frequency with which gall-stone disease gives rise to what is described by the patient as "indigestion" or "stomach cramp," is familiar to you all and scarcely needs mention. Riedel states that of 100 cases of epigastric colic, 97 are due to gall stones. The pain in hepatic colic is apt to be confounded with that due to diseases of the stomach, for the reason that the pain is at times made worse by eating, and frequently relieved by vomiting. The seat of the greatest pain and tenderness in gall stones is usually to the right of the middle line. The pain may radiate to the chest behind or in front, onset may be sudden following exertion, etc.; irregularity of the attacks which often come on during the

night, and do not, as a rule, bear any relationship to the taking of food, and the inability of the patient to take a full inspiration when the examiner's fingers are hooked up beneath the right costal border as mentioned by Naunyn, are all symptoms of value.

Boas has called attention to areas of referred tenderness in gall stones and gastric ulcer. He finds that in the majority of patients suffering from cholelithiasis there is an area of tenderness on pressure, about two or three finger breadths to the right of the spine on a level with the twelfth thoracic vertebra, and that in gastric ulcer there is frequently a similar tender area on the left side between the tenth and twelfth dorsal vertebra. I have found the tender area frequently present in gall stones, but only occasionally in ulcer, and have also found it present over the twelfth rib in cases with stone in the kidney. Of course, it is not my intention to enter into an exhaustive description of pain and its variations, in a short paper, but merely to point out some of the diseases in which pain is experienced in the epigastrium, and delineate some of its features as most commonly met with. Occasionally the diagnosis of diseases of the upper abdomen presents great difficulties, even after carefully considering the anamnesis together with the signs, symptoms and laboratory findings.

Pain is usually not a conspicuous symptom in cancer of the stomach and it is frequently described by the patient as a feeling of soreness, discomfort, a painful dull feeling in the gastric region. Pain may be absent in some cases while in other cases the pain may be of a colicky character. As a rule, in cancer of the stomach one may palpate the stomach and handle the growth, if present, without causing much distress to the patient.

The various forms of acute gastritis are usually accompanied by a somewhat sensitiveness over the gastric region, or it may be painful spontaneously or on pressure. The severity of the pain will depend on the cause and the extent of involvement.

Attacks of pain proper do not belong to the syndrome of ordinary chronic gastritis. The patients sometimes complain of pain, which is more of a disagreeable feeling than a pain, soon after eating. According to Riegel the atrophic forms of chronic gastritis occasionally give rise to pain that resembles the gastric crises of tabes.

Gastroptosis is frequently a cause of epigastric pain which is more of a drawing, or nauseating character and a sensation of fullness. The pain may be increased after eating, or on standing, and relief is usually experienced when the abdomen is given support by judicious pressure in the proper direction afforded by the wearing of a belt or lying down after meals.

Motor insufficiency causes a sense of weight or fullness and the region of the stomach may be slightly tender to pressure.

Stenosis of the pylorus and hour-glass contraction produce pain of a colicky character, which may be relieved by vomiting. Pyloric spasm may cause pain which resembles hepatic colic, only the pain in the former condition is less severe.

Gastralgic attacks are seen in a variety of diseases of the stomach and may be primary or secondary. The onset of the pain is sudden, appearing in the form of paroxysms at irregular intervals independently of eating and may occur when the stomach is full or when it is empty. The character of the pain is violent, burning, boring or tearing and it is usually relieved by strong pressure. Cases of primary gastralgia are rare. The condition is usually secondary to some other disease, as hyperchlorhydria,

gastric ulcer, disease of the brain, spinal cord, or it may be reflex in disease of the liver, pancreas, sexual organs, kidneys, spleen, bladder, etc. Hysterical gastralgia is extremely rare in my opinion. Gastralgia may be a symptom in chlorosis, anemia, malaria, etc. The writer had a case recently in which there were violent attacks of gastralgia extending over a period of eighteen months, the cause being a chronic appendicitis. I also had a case of gastralgia due to a tape-worm; on removal of the worm all symptoms disappeared. Tabes is the most prolific cause of the so-called gastric crises, and a fact which adds to the difficulty of the diagnosis is that the attacks usually occur in the early stages of the disease before the typical signs and symptoms of this disease have developed. Sir Frederick Treves (*London Practitioner*, January, 1903) reports two interesting cases of spinal disease in which pain was referred to the upper abdomen. One was a woman of forty-five who had complained for several months of a distressing pain in the epigastrium. The pain was said to be worse after eating and relieved by vomiting and also by lying down. There was gastric dilatation and superficial epigastric tenderness. Rest in bed cured the disease which was caries of the mid-dorsal region. The other patient was a man who had complained of intense pain in the epigastrium, which became worse after eating and which was relieved by forced vomiting. There was dilatation of the stomach and an operation was undertaken to relieve the supposed stenosis of the pylorus. Upon opening the abdomen nothing abnormal was found, the gastric dilatation having disappeared under ether. The disease was subsequently found by accident to be a sarcoma of the mid-dorsal region from which he died a few months later.

Attention should also be called to caries of the spine in children as a cause of pain in the epigastrium. From an intelligent child one may be able to learn that the pain encircles the body, is superficial and that it is relieved by lying down. Otherwise the child may feel well. Pressure on the nerves from other causes may refer pain to the stomach region. Angina pectoris and abdominal pain due to arteriosclerosis are occasionally treated for stomach disease. The pain in those diseases may be in the epigastrium or above the navel and it is usually brought on by exertion, emotional disturbance, etc., in individuals past forty. Digestion is usually not disturbed and the taking of food does not bear any relations to the onset of the pain, except that too large a meal may occasionally bring on an attack. In arteriosclerotic abdominal pain, Buch recommends diuretin, 45 to 60 grs. daily, and strophanthus 15 to 24 drops daily, as these drugs aid the diagnosis in that they are almost a specific in this disease. Musser refers to the epigastric pain of acute pericarditis, and of a congested left lobe of the liver in acute failure of compensation, and Jones mentions the referred pain of rupture of the heart. Pleurisy and pneumonia sometimes cause pain in the upper abdomen during the first few days of the disease and before other signs are manifest, and in the former the pain may continue to be referred to the epigastrium throughout the attack, as did occur in two cases of left-sided pleurisy seen recently by the writer. Other causes of pain are adhesions around the duodenum, pylorus, gall bladder, right kidney, colon, lead colic, pleurisy and rheumatism of the diaphragm, aneurysm of the aorta, either above or below the diaphragm, detached omental tabs, etc. The pain in pancreatic disease may in some instances resemble that due to disease of the stomach

or duodenum, in that it may be worse after eating, and together with other dyspeptic symptoms, hematemesis may also occur. A case of this kind came under our observation at the Polyclinic several months ago: Male, white, aged 30 years, history of lues. He had been complaining of dyspeptic symptoms for several months and pain in the epigastrium coming on one to two hours after eating. There had been one attack of hematemesis. There was tenderness and slight muscular rigidity in the epigastrium to the right of the middle line. No jaundice, and no mass palpable at that time. The case appeared to be one of duodenal ulcer. From the lack of room, he was sent to the University Hospital and came under Dr. Musser, and the diagnosis rested between duodenal ulcer and gall stones. A subsequent exploratory operation performed by Dr. Martin revealed a gumma of the head of the pancreas.

In acute pancreatitis, the pain may be severe and associated with syncope and collapse. Pain is less severe in the subacute and chronic forms of the disease, and while it does not disappear, it has a tendency to occur in paroxysms, or it may be a dull ache deeply seated and pass backward to the mid-scapular region or around to the left side. The tender and swollen gland may be palpable. The most severe continuous pain that I have ever witnessed was in consultation with Dr. Crilly of Philadelphia, in the case of a woman of 32 years. She had had an adeno-carcinoma of the right breast removed in March, 1907, with a recurrence in the glands of the axilla necessitating their removal in May. Pain had been present for several months and was through the body between the lower dorsal region and the xiphoid. The abdomen became distended, bowels continued regular. When I saw her in July she was very much emaciated, pulse 90, temperature 100; marked abdominal distension, slight amount of fluid in the flanks, lower border of right lobe of the liver palpated with difficulty. It was

smooth and but little harder than normal and not appreciably enlarged. The left lobe of liver was very large and extended from the fourth rib to the costal margin to which it was adherent. Autopsy showed extensive cancerous infiltration of the liver, especially the left lobe as stated, which was adherent to the diaphragm.

In rheumatism of the abdominal muscles the whole muscle is involved. Hyperesthesia of the abdominal wall can be eliminated by picking up the abdominal wall in the fingers and pinching same, when it will be shown that the tenderness or pain is increased. Hernia of the linea alba, an infrequent condition can be recognized on careful inspection and palpation. Pseudo-neuralgia in victims of the morphine habit may simulate a gastralgia or intestinal colic, withdrawal of the drug causing subsidence of the pain. French writers, Janeway, Musser and others have called attention to the abdominal pain and so-called indigestion which occasionally mark the onset of uraemic intoxication. In pain of obscure origin one should avail himself of the knowledge to be obtained in the laboratory by examination of the blood, feces, etc., and the use of the Roentgen rays, and not resort to sedatives which mask the symptoms and lead to drug habits. Sedatives should not be used, particularly when one suspects a perforation of a hollow viscus, unless consent to operation has been obtained, as their use may be followed by a sense of relief and well being which may deceive the patient and his family into the idea that an operation is not necessary, until it is too late for surgery to successfully intervene. An exploratory operation is the only treatment under the circumstances. In other surgical conditions, prompt surgical treatment should be employed.

HYPERTONIA VASORUM OF NERVOUS ORIGIN AS A CAUSE OF HEART DISEASE.

BY

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In seeking an explanation for the great increase in the number of cases of heart disease, which is believed to have taken place recently, it would seem that hypertonia of the blood vessels should claim our attention as a possible cause.

The general term "high arterial tension" is much used in recent literature but does not in its usual sense cover all that we mean by hypertonicity of the blood vessels. In this term we refer to the condition of the coats of the blood vessels as being in a state of muscular contraction. Of course, if the accompanying circumstances of a competent over-acting heart, and a sufficient bulk of blood are present, the result will be high blood pressure, and in all cases high blood pressure does actually come between hypertonia vasorum and cardiac damage. Nevertheless, we believe that hypertonia of the blood vessels is the underlying vicious circumstance that leads to all the rest.

In order to understand the nature of hypertonia it is necessary to review for a moment certain facts in physiology that have not received the attention that they deserve, even though they are generally known. In the first place, there is a normal tone of the involuntary muscles of the blood vessels that corresponds to the tone of the voluntary muscles. It is well known that in health the voluntary muscles are under the influence of the central nervous

system at all times, and that there goes out from the central nervous system an influence that maintains them in a condition of tone. If the limb is passively moved by an operator the muscles on one side of the joint are stretched and those on the other side of the joint automatically contract just enough to keep them from being wrinkled up and to maintain the symmetry of the limb and the steadiness of the joint. This, of course, is in a measure due to the elasticity of the muscles, but it is also due to this tone in the muscles which is under the control of the central nervous system. As witness, note the flaccidity of the limb when it has become recently paralyzed by its nerve supply being cut off from the central nervous system.

This tone-maintaining influence of the central nervous system over the voluntary muscles is important. But far more important, is a similar control exercised over the involuntary muscles by the nervous system, not the least important of these muscles being those in the coats of the blood-containing organs.

When a person dies all the blood-containing organs relax and the blood gravitates to the dependent portions of the body. When a person suffers from shock of a severe nature, the same thing happens in a measure. The blood in the body is only about enough to fill one-third of the capacity of the blood-containing organs, and the proper distribution of the blood is entirely dependent upon their tonicity.

Under conditions of neurasthenia and debility this tone of the blood vessels is diminished. Under conditions of excitement and over stimulation, particularly of the brain, this tonicity is increased. If the heart is competent and the bulk of the blood sufficient, there results a high blood pres-

sure and in order that all parts of the body shall be properly supplied with blood through its contracted arteries, the heart is called upon to do extra work, which in the long run is liable to cause damage.

Modern conditions of life are such, with the high cost of living, the universal ambition and general education which brings a vast number of cultivated brains in active competition with each other, that the number of persons whose hearts are doing extra work to overcome resisting conditions is greatly increased and hence the great increase in the number of persons suffering from heart disease.

54 W. 55th St., New York City.

The Diagnosis of Inguinal Hernia in Children.¹—The diagnosis of inguinal hernia in the child seldom presents any difficulty. A swelling in the groin reducible on pressure, growing tense when the child cries, and often disappearing during sleep, can hardly be anything but a hernia, though occasionally a collection of fluid in a patent processus vaginalis with a very small opening at the internal ring may be mistaken for a hernia. There is another error in diagnosis which may prove of some importance. It is often thought that the only scrotal swelling which is translucent is a hydrocele but in young children where there is no large amount of fat and the bowel wall is thin an inguinal hernia may be translucent and thus it may be mistaken for a hydrocele. If on the strength of this mistaken diagnosis the swelling should be punctured with a trocar and cannula the result would probably be disastrous.

In persons who have had malaria any operation which taxes the vital powers may provoke a recurrence, and it is important to differentiate the resulting fever from that due to a septic process.—*Inter. Jour. of Surgery.*

¹ From Editorial, London *Lancet*, Jan. 25, 1908, p. 241.

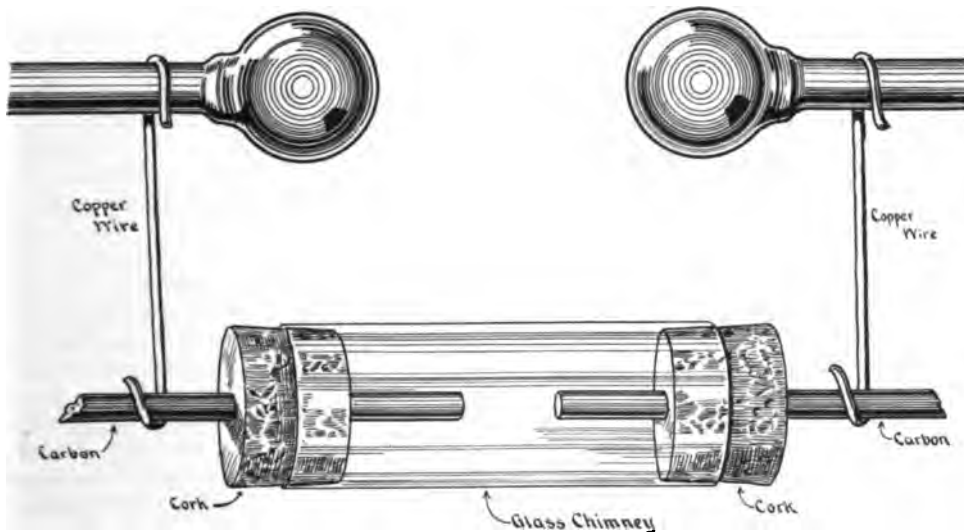
A SIMPLE SPARK MUFFLER FOR USE ON STATO MACHINES.

BY

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New York City.

A simple yet very effective spark muffler can easily be made with a straight tube of glass, such as an argand or Welsbach chimney, two large corks to fit into the ends, two sticks of arc lamp carbon, and two pieces of uncovered copper wire.

Bore a central hole in each cork (with knife or cork borer) so that the carbons will fit fairly tight. If carbons are copper covered, scrape this off before using, as the nitric acid and ozone generated at the arc will corrode and deposit copper on the glass, thereby short circuiting the current.



A SIMPLE SPARK MUFFLER.

Bend the copper wires into two S shaped hooks to support or suspend muffler from the current poles.

When using adjust the spark gap to the desired length by separating the carbon points to the proper distance, then gradually open the spark gap of the machine or coil poles, and when the two points (machine and muffler) are equal the muffler will take up the current, and soften the noise.

Should the spark sputter or spray, clean the glass tube inside and out (just as in cleaning any ordinary lamp chimney).

This muffler will last for years, and will be found adapted to the majority of machine, coil or high frequency currents.

In the treatment of neurasthenia the terrifying noise caused by the spark frequently retards the progress that the current would otherwise produce in the patient's condition. This form of muffler has been tried very successfully for a long time, and found superior to those sold by the various manufacturers.

Of course larger mufflers can be made by using longer and larger glass tubes, etc., but the carbon sticks need not be increased in size. The glass tube must be frequently cleaned, to maintain the highest efficiency of the apparatus.

Fecal Impaction.—In fecal impaction according to Tuholske, vomiting appears late and is never feculent until after a period of complete obstruction; constipation is pronounced, increasing; meteorism gradual; the abdomen feels full and doughy and a tumor can be made out in the colon or rectum.

Carcinoma of the Uterus.—Berg says when a woman at the menopause commences to flow irregularly and profusely, and has a foul, watery or purulent discharge, she should not be considered as following the normal course at this period, but she should be strongly suspected of having a carcinoma of the uterus.

CORRESPONDENCE.**SOME REMARKS ON THE CONFIDENTIAL RELATIONS BETWEEN PATIENTS AND PHYSICIANS.**

BY

H. P. ASHE, M. D.,
Pittsburg, Pa.Editor *American Medicine*,
New York City.

DEAR SIR:—Your article in the *American Medicine* of November, regarding Ex-President Cleveland's plea for greater confidential relations between patients and physicians afforded me lively interest as will appear later in this contribution.

It is well to bestow confidence where it will prove beneficial.

I will cite a few incidents where it did not attain the desired end. In a suburban portion of this city a physician took a mater familias into his confidence sufficiently to tell her he was prescribing calomel and soda for one of her children. Result, calomel and soda is now a part of the domestic materia medica of a large number of families in that community, and it is quite common for the physician to find out that a course has preceded his call.

Another case was where a physician considered the use of opiates injudicious. The husband of the patient on his own impulse procured several tablets of morphine sulphate from an obliging pharmacist. Result, wild search for the physician, who succeeded in saving the patient from an overdose after a hard battle.

An attorney who is to all outward appearance sane and sensible about most matters, entertained me with an emphatic claim that he had cured several cases of epilepsy by means of a nostrum he had imported from a western city.

A high school principal who remarked that his spectacles were "going back" on him, when advised to consult an oculist, replied gravely and self-importantly,—"I shall consult an optician, not an oculist."

One more, and the climax is attained. Mr. Cleveland, to whom your editorial alludes, has the reputation of employing some years back the services of an optician who makes special trips regularly to Princeton to minister to the optical needs of the Cleve-

land family. This optician has paraded this patronage in newspaper interviews, as well as in his numerous business conversations with customers, and acquaintances. In a quite egotistic style he boasts of his personal and commercial friendship with the Cleveland family, and so far as the story goes never has an oculist intervened between this worthy and his patron. Many a "cuckooist" impressed with this tale, has added his patronage, convinced that great statesmen patronize great men. If a peripatetic optician can Barnumize the sage of Princeton with his audacity, there is not much use about "lifting the veil of mystery," etc., on the part of physicians. Let those whose reputations are mighty as leaders of thought sweep a few cobwebs or veils or whatever they may be from their own befuddled intelligences, and produce in themselves a state more receptive to important confidences.

When the so-called intelligent class cannot see the error of indiscriminate, unintelligent drug-using, and unreservedly place their eyes in optician's custody, how can they expect pearls to be thrown before swine?

I know of one man, who on the slightest illness in his family notifies his family physician. To the remonstrances of his neighbors and friends that it is unnecessary for him to call for a physician on the slightest occasion, when probably himself or wife or some neighbor could be utilized instead, he invariably replies that he, his wife, or neighbor are not competent, that it is a physician's business to attend to the sick and no one else's,—finally that he has confidence in his family physician, and his physician confides in him completely. This man is contemptuously styled a fool by his thoughtless advisers. Every physician knows that this type of man is wise above his fellows, that he is running no risk whatever, and is giving himself and his family what he considers to be the best conscientious care possible. Unfortunately both for the public and the medical profession this type of thinkers does not preponderate among men.

An individual of limited intelligence will hire a cobbler to mend his shoes, a carpenter to build his fence, or a lawyer to look after matters of litigation, but the aforesaid cobbler, carpenter, or lawyer, or any one else may advise him medically, and he

will accept it cheerfully, though every thinking man must know that worthless services are always cheap,—that what is worth having must be paid for,—and what is skilful cannot be prosecuted by everybody.

Nov. 30, 1907.

Mr. Editor:—

The optician mentioned as boasting of Mr. Cleveland's patronage is one J. Kornblum, optician of this city. Whether his claims are true or not, I do not know.

I can say, however, that through the papers of this city first was I made aware of his claim, and later through a friend who wore spectacles with whom he scraped acquaintance while said friend was on a trip from New York to Pittsburg. He sat down beside my friend, struck up a conversation about his spectacles, asked leave to examine them, then told him his optical defects, spoke of his own vast experience as an optician, and lastly that he was just back from Princeton where he had been attending to the optical wants of the Cleveland family.

Now, Mr. Editor, I am not desiring to rush into print, in fact would much rather have you write up this matter, feeling that you are much abler than I, if you care to.

I am not one of the lick-spittlers who follow fawning even the errors of the great living Americans, but I am sorry to say that many are influenced by their errors, and I think many who have followed the Cleveland example optically must have fared badly. It would be interesting to know whether the present chief magistrate of this nation is setting a better example.

Republican as we claim to be, we still seem to be very much attached to the President's or Mr. Frick's physician or the ex-President's optician. Skill attained while attending the lowly appeals little to the average vanity-loving, money-worshipping American.

Very sincerely,
H. P. ASHE.

ETIOLOGY AND DIAGNOSIS.

Diagnosis of Wounds of the Heart.¹—

If after an injury of any kind the pericardium fills rapidly and becomes tense with symptoms of cardiac pressure, the diagnosis of wound of the heart according to Rehn is certain. The symptoms of tension are pains in the left arm, a feeling of oppression, precordial pain, especially on expiration, which is made worse by pressure over the heart. Often there are violent, especially left-sided, pains in the abdomen, pronounced reflex muscular tension of the upper abdominal muscles, and shortness of breath, although the lungs are free. The pressure on the heart causes cyanosis from the slightest to the most extreme degree, the cervical veins being more or less filled. The pulse is thin, sometimes even to vanishing. Face and extremities are cold. The shortness of breath gets worse, and becomes dyspnoea. The patient at last becomes soporose, or falls into a deep faint.

Free continued hæmorrhage from an external wound in the cardiac region points to extra-pleural wound of the heart, whilst a stream of frothy blood only points to hæmorrhage from the interior of the chest.

If the results of percussion in the early stages of filling-up of the pericardium are uncertain, Röntgen illumination, especially the stereoscopic, may lead to decisive conclusions. It distinctly shows the enlarged area of cardiac dulness and the presence of foreign bodies.

We may assume a wound of the heart with great probability when the external wound corresponds and the kind and direction of it allow such a conclusion, when, along with a hæmo- or hæmo-pneumothorax, abnormal sounds can be heard.

The sounds may originate extra- as well as intra-pericardially; even the signs of a pneumo-pericardium are not a proof of a wound of the heart. The diagnosis gains in certainty the more the precordial wound approaches the sternum—i. e., the more fixed portion of the heart, or when the sternum is penetrated. A systolic rushing sound is of great diagnostic value, but is not heard too frequently.

Post-operative gaseous distention of the stomach and intestine can often be relieved by gentle kneading of the abdomen without the necessity of resorting to a stomach or rectal tube.—*Inter. Jour. of Surgery.*

¹ R. Rehn, M. D., Frankfort-on-Main, Med. Press and Circular, Jan. 22, 1908, p. 90.

Differential Diagnosis between Measles and Rubella.¹—McClanahan gives the following differential diagnosis between measles and rubella. Measles always has a cough, and it is usually characteristic; conjunctivitis is nearly always present; pharyngitis is always present and the soft palate is always implicated; the fever is intermittent; a strong light and careful inspection will always reveal Koplik's spots. The prodromal symptoms vary in degree; they precede the rash for from three to five days, and may send the patient to bed. The rash is maculopapular, and begins on the forehead and face; it spreads all over the body in forty-eight hours; the papules are at first discrete, then fuse, but always leave irregular patches of normal skin between them; the rash begins to fade on the third day; it takes longer to disappear than in rubella. The temperature varies with the amount of rash, and may rise to 104°. The prodromal symptoms of rubella are always slight; many patients do not have them at all, while in measles they are always present; there are no Koplik spots during the prodromal period; the superficial lymphatic glands are usually enlarged and tender. The rash is papular, begins about the lips and cheeks and covers the whole body in twenty-four hours; the papules remain more discrete; the rash fades more quickly; by the third day it may have entirely disappeared; there is no pigmentation, as seen after measles. The fever rarely rises beyond 101°. The glandular enlargement precedes the eruption in rubella, follows it in measles. Measles may have complications, rubella has not.

The Clinical History of Cholecystitis.*

—In a splendid paper on the Diagnosis of Cholecystitis Bettman states that both the mild and severe attacks of cholecystitis are often preceded by premonitory symptoms. Substernal pressure is the most common of these. A boring sensation behind the middle or lower fourth of the sternum is always to be looked upon

with suspicion, especially if it occur independently of the taking of food, or at night or if it remain without apparent cause. Vague sensations of discomfort at the pit of the stomach or a persistent desire to belch, unrelieved by the act of belching are often the earliest symptoms. Pain usually ushers in the acute attack and is preceded by a chill only in the severe cases. The pain is more frequently referred to the epigastrium than to the gallbladder region. Sometimes the pain is entirely to the left of the median line; usually it is reflected to the back, between the shoulder blades; it is not generally radiating in character, and in the majority of cases is severe enough to justify the use of morphine. Vomiting is usually an early symptom and sometimes persists during the first 24 or 36 hours, or sometimes even longer; the vomitus consists chiefly of mucus, often mixed with bile and later on nearly pure bile. Fever is absent in the mild cases, but often rises to 102 or 103 degrees in the severer forms and may last for several days. Leucocytosis is absent; the bowels are constipated; jaundice very rarely occurs. On the second or third day the acute symptoms subside, but may recur sharply on the least indiscretion of diet. A feeling of soreness is usually left for several days longer in the region of the gallbladder. In mild cases all the symptoms have disappeared at the end of a week. The severer cases may last two or even three weeks, and there may be dyspeptic disturbances, especially a recurrent feeling of substernal or epigastric pressure for weeks thereafter as an indication of the slowly subsiding catarrhal inflammation. When the acute attack is grafted upon a chronic condition (chronic cholecystitis with or without cholelithiasis) the symptoms may not clear up at all and the patient may continue to suffer, indefinitely, from various so-called dyspeptic disturbances in which pain, pressure and belching play the leading role.

In administering chloroform, it is generally advantageous to raise its temperature by immersing the bottle every now and then in warm water of about the body temperature.—*Inter. Jour. of Surgery.*

¹ H. M. McClanahan, M. D., *Jour. A. M. A.* XLIX, 1907.

* H. W. Bettmann, Cincinnati, *Archives of Diagnosis*, Jan., 1908, p. 24.

TREATMENT.

Practical Points in the Therapeutics of Skin Diseases.¹—In a very interesting and practical paper Bulkley states that he regards the practice of dermatology as strengthening faith in therapeutics and teaching much of its principles. Certain golden rules of diagnosis should always be observed before formulating a treatment. Every part of the affected area must be examined, the primary lesion must be searched for, a good light and a magnifying glass must be employed. A differential diagnosis should always be gone through mentally, and the possibility of syphilis entertained. The name arrived at in diagnosis must not control the line of treatment. Two patients with different names for their disease may benefit from identical treatment, whereas two patients with the same disease will show differing reactions to the same treatment.

Skin therapeutics is divisible into (1) constitutional and (2) local treatment. The course of arsenic so often instituted for the former purpose effects very little good. Regulation of diet is much more important. In some acute erythematous and bullous eruptions, in acute general eczema, a limitation of the diet to bread, butter, and rice boiled in salt and water, for a few days, is an excellent treatment. Milk, as ordinarily used, may be harmful in many diseases of the skin. Some cases of acne in greasy, muddy skins clear up quickly when promiscuous milk drinking is discontinued. Milk should only be taken during the "alkaline tide," *i. e.*, one hour before meals or three to four hours after meals. The object is to prevent coagulation by contact with the acid gastric contents, and to obtain rapid absorption without undergoing the process of caseation.

A strictly vegetarian diet is advisable for cases of psoriasis; many patients have relapsed when returning to a meat dietary. In many instances tea and coffee should also be excluded. Abstention from these substances is often necessary for the cure of acne and eczema. The same applies to al-

cohol. The late ulcerative lesions of syphilis occur mainly in those who indulge in spirits. Sweets are also contra-indicated in many skin diseases, more especially in acne.

The exact analysis of the urine is important for the constitutional treatment of skin diseases. Its relative acidity should be estimated precisely at intervals. The presence of indican should be determined, as indicating intestinal fermentation. A diminished excretion of urea often heralds a relapse of dermatitis herpetiformis. Microscopic examination will reveal urates, oxalates and phosphates; volumetric analysis will be necessary for the chlorides and sulphates. A rebellious case of skin disease will often receive useful hints for treatment from these procedures. The action of the liver and intestines must also be noted. A purgative pill often does yeoman service.

Potassium acetate is the best antacid available, and taken with *nux vomica*, the fluid extract of *rumex root*, perhaps with a little cascara, freely diluted before meals, it has worked a radical change in many cases of congestive acne.

In ordering a local application the prescriber must be clear as to whether he requires a (1) protective, (2) soothing, (3) astringent, (4) antipruritic, (5) emollient, (6) stimulant, (7) absorbent, (8) antiparasitic, or (9) destructive. Powders for dusting are useful in herpes, zoster, slight infantile papular eczema, and urticaria. For the latter chloral and camphor powder should be well rubbed in. Lotions of calamine and zinc are suitable for erythema or eczema, ichthyol in 25 per cent. solution for pruritus, and sulphur lotion for acne. Plasters are useful for chronic lesions, *e. g.*, salicylic plaster for psoriasis, mercurial plaster for syphilides. Ointments should be ordered to be freshly compounded with cold cream or *unguentum aquæ rosæ*. Vaseline, as a rule, is unsuitable, except in Lassar's paste with salicylic acid. Ointments should not be rubbed onto the skin, they should be thickly spread on the wooly side of lint and applied to the affected surface.

Many skins suffer from too much washing, which removes the natural oily secretion required for its integrity. Cutaneous lesions are often irritated and the disease kept up by washing.

¹L. D. Bulkley, M. D., *Therapeutic Gazette*, Dec., 1907.

The Treatment of Chordee.¹—Robinson says that when chloral is contraindicated, the following capsules have never failed in his hands:

R Ext. rhamni purshianæ, gr. ij.
Codeinæ phosph., gr. 1-3.
Heroini hydrochlor., gr. 1-12.
Lupulini optimi, gr. iij.
Camphoræ monobrom., gr. ij.

Misce et fiant capsulæ. Signa: Take one capsule before retiring.

Sometimes suppositories prove the most efficient, and the following is an excellent combination:

R Atropinæ sulph., gr. 1-120.
Codeinæ phosph., gr. ss.
Antipyrinæ, gr. v.
Ol. theobromæ, gr. xv.

Misce et fiat suppositorum no. j. Dentur tales doses no. xij. Signa: Insert one before going to bed; another may be used during the night.

To relieve the actual attack, the patient should wrap a cloth or towel wrung out of ice-water about the member, or put it in hot water, as hot as can be borne. If the desire to urinate is present at the same time with the chordee, the patient should urinate in the water. Swallowing pieces of ice has relieved many of the author's patients, but whether suggestion plays a part here is hard to determine.

Trypsin as a Therapeutic Agent.¹—

Trypsin according to Alcindor does not seem to have any evil effect on healthy living tissues, but in the presence of an alkali it splits proteids into proteoses, peptones, and polypeptides; these are further split up into leucine, tyrosine, aspartic acid, hexone bases, and other ammonium compounds. It attacks all proteids alike and exercises no selective action on cancer tissue. These facts would explain the reason why the two cases showed marked improvement up to a certain point; also why the first patient grew progressively weaker, while the second died rather unexpectedly from toxæmia. The trypsin not only digested the growths but attacked the elaborated proteids which were

circulating in the blood for the nourishment of the organism, and converted them into toxic products; hence trypsin cannot be injected into the body for an indefinite period without producing deleterious effects, so giving rise to the very condition suitable for the growth of cancer. I am, however, convinced of the power of trypsin to digest cancer, but it must be applied directly to the disease and not in its neighborhood. Cancer of the internal organs cannot be successfully treated by this method, whereas rodent ulcer, epithelioma, and cancer of the cervix are eminently suitable for the treatment provided the cases are in the early stage. In view of the conflicting opinion of gynaecologists regarding operation, I think trypsin ought to be given a fair trial in cervical cancer. It should also be used in inoperable cases where the outlook is hopeless and palliative treatment the only course to adopt. Finally, it is in nutritional disorders in which there are circulating in the blood imperfectly metabolized substances like uric acid that injections of trypsin are of the utmost benefit. In the course of three weeks Case I got rid of a uratic deposit and rheumatic pains in the hands and knees. In the same time Case II was greatly relieved of a condition which could only be diagnosed as rheumatoid arthritis.

CONCLUSIONS.

Lowered vitality, whether due to faulty metabolism, alcoholism, over-stimulation, diseases of trophic nerves, the debilities, general or local, is in my opinion, the predisposing factor in malignant disease. Chronic irritation, of no matter what character, is the determining factor; the cells of the tissue irritated, unable to respond normally to the irritant, assume characteristics suitable for their environment, thus conforming to a natural law.

Trypsin is of considerable value in cancer. Uteri carcinoma cervicis, rodent ulcer, and epithelioma are eminently suitable for the treatment. Gout, rheumatoid arthritis, and chronic rheumatism ought to be treated by injections of trypsin when other better-known methods have failed. Regarding amylopsin, I may state that after injecting it singly and in combination with trypsin I have found it of no value in the treatment of cancer.

¹ Critic and Guide, Dec., 1907.

² John Alcindor, M. B., Edin. British Med. Jour., Jan. 11, 1908.

The Local Treatment of Chilblains.¹—Gardiner says that foot and hand wear must be carefully chosen; warm it must be, tight it must not be, and it should not be rough and irritating.

Massage is very helpful, but especially so as a prophylactic. In the erythematous stage it may be too painful to be borne; again, here careful directions as to method must be given.

Two drugs stand out pre-eminently as of value in the early stages, viz., ichthyol and formalin.

Ichthyol is well-known to have a special effect in reducing congestion. Any strength may be used, but 10 to 20 per cent. in lanolin serves most purposes. (The author has used it in full strength painted on).

This ointment, spread thickly on linen, and worn at night on the affected parts, often dispels a commencing attack after a few applications. To get over the odorous character, sometimes objected to, its ally, Thigenol, may well be used in its stead. During the day it may be used in the form plasters, if convenient.

With the same end in view, Gardiner has tried adrenalin and adrenalin and chloretone ointments, in a like manner, but although praiseworthy and more suited to æsthetic minds, he prefers ichthyol.

Formalin, an equally powerful drug, is one requiring much more care to employ it satisfactorily. The odour is pungent, but, if there is the slightest abrasion of the skin, smarting effects are still more disagreeably evident. In ointment form it may be used in 10 to 50 per cent. strengths; this method answers best when the patient has a sensitive skin, when, however, we have to deal with coarser skins, the remedy may be used pure.

The astringent action of the drug may go too far, and then the horny layer of the skin becomes hard and cracks. Consequently, after a few days, it is advisable to stop using it, and apply lanolin or vaseline. It can be subsequently resumed if necessary. As an antiseptic, it also prevents the complication of subsequent infection of the parts—there being many cases in which recovery is prolonged by the intrusion of surface organisms. If a distinc-

tion is to be drawn between these two agents, formalin might be classed as more effective, more lasting in its results, but much harsher in its action, therefore more suited for the male sex, whilst Ichthyol might be described as more soothing, more simple in its method of application, and undoubtedly better suited for delicate skins. Treatment may accordingly, in some cases where there are cracks, be started with ichthyol, and finished with formalin.

Various other applications are also commonly applied at this stage. Of these, iodine, either as tincture, or painted on in collodion (2 per cent. iodine), silver nitrate in solution and camphorated spirit are best known.

The Treatment of Postpartum Hemorrhage.¹—In a scholarly paper Brock points out that the treatment of serious postpartum hemorrhage resolves itself into that of regurgitant venous hemorrhage, and must be carried out by one of two methods: 1, The application of direct pressure to the bleeding sinuses, after the method advocated by Dr. Herman, of introducing one hand closed into the vagina, while, with the other, the fundus of the uterus is pressed down on to it through the abdominal wall; or 2, elevation of the pelvis and compression, not of the aorta, but of the inferior vena cava, by precisely the same manoeuvre. He is of opinion that the method for arresting postpartum hemorrhage by compression of the aorta depends for its success on the compression, not of the aorta, but of the inferior vena cava, thus stopping the backwash of blood from the latter vessel.

In persons with a tendency to hemophilia slight injuries to a joint may be rapidly followed by swelling due to effusion of blood into the synovial sac and severe pain. In such cases there is no rise of temperature nor constitutional disturbances indicating an inflammatory process and the effusion often subsides completely without leaving any traces of its presence.—*Inter. Jour. of Surgery.*

¹ F. Gardiner, M. D., *The Practitioner*, Feb., 1908, p. 251.

¹ J. H. E. Brock, *The Practitioner*, Jan., 1908

GENERAL TOPICS

The Extent of Medical Knowledge in China.¹—As it is illegal to practise human dissection, anatomy and physiology are fairly primitive sciences. There is no distinction between arterial and venous blood, nor between muscles and nerves. They recognise that blood runs in the vessels, and that there is a perpetual motion of circulation about 50 rounds every 24 hours. It has been claimed that the circulation of the blood has been known to Chinese physicians for 2000 years, but they have no idea of the physiology of circulation. The brain is a mysterious organ which communicates through the spine with the whole body, the spinal canal being a receptacle for marrow. The larynx goes through the lungs directly to the heart and the pharynx passes over it to the stomach, which is the seat of learning. The heart is the principal organ of the whole body, and there are three tubes which pass out of it going directly to the liver, spleen, and kidneys. The lungs are suspended from the spine. The liver has seven lobes and is the seat of the soul. The gall-bladder is the seat of passion: when it rises up and pushes into the liver the person becomes angry. The spleen assists digestion and lies between the stomach and the diaphragm. The pancreas is unknown. The small intestines communicate with the heart and urine passes from them into the bladder. The kidneys secrete the seminal fluid which passes from them to the testes, which are known by the name of the "outside kidneys." Food is separated from the urine at the cæcum, from where it goes on through the large intestine.

Osteology, Materia Medica, and Chemistry.

Osteology is in a better state. All the bones are known and identified but the ligaments and joints are not taken much into account, and no Chinese would allow a native practitioner to reduce a dislocation if there were any foreign medical man available. Many works, some of great length, have been published on materia medica and plants. Though laborious, they are unscientific and are not studied by native "doctors" to any extent. Chemistry is little known—nearly all the chemical productions are used in medicine, the best known being

calomel, carbonates of sodium and potassium, saltpetre, alum, and the sulphates of iron and copper. Such, in brief, is the state of medical knowledge in China at the present day.

The First Operation for Appendicitis.

—The question is often asked says the *Lancet* editorially,¹ "When was the first operation for appendicitis performed?" We have been asked it this week almost exactly in these words. The answer must depend greatly on what is meant by operations for appendicitis. If we may include among such operations the evacuation of an abscess resulting from an attack of appendicitis we must go back a very long way indeed. Doubtless many such abscesses were opened ages before any record of such operations was made. Aretæus, who flourished some 50 years before the commencement of the Christian era, says: "I once made an incision into an abscess in the colon on the right side near the liver and much pus gushed out." This may have been an appendix abscess but he goes on to say that much pus also was evacuated with the urine, so we cannot be sure that it was not a pyonephrosis. Here and there through the following centuries we find cases recorded which are fairly certainly examples of incision of an appendix abscess but it was not till 1759 that we meet with an operation for abscess which was definitely shown to be due to disease of the vermiform appendix; in that year Mestivier incised an abscess on the right side of the abdomen near the umbilicus and much pus was evacuated. The wound healed but the patient died before long and at the necropsy a pin was found in the appendix with many signs of inflammation. Seven years later Lamotte described a large faecal concretion in the appendix but the discovery was only made post mortem. In 1848 Hancock reported the opening of an abscess immediately above Poupart's ligament on the right side and later two faecal concretions came away. The incision was made early, even before fluctuation could be detected. In 1867 Parker published four similar cases and from that time the opening of abscesses in the right iliac fossa became less rare. The earliest suggestion to remove the appendix appears to have been made by Fen-

¹The London *Lancet*, Jan. 18, 1908, p. 194.

¹Feb. 1, 1908, p. 388.

wick in 1884 and this operation was performed by Krönlein in the same year. He opened the abdomen of a boy aged 17 years who had general peritonitis and ligatured and removed the perforated appendix. Some temporary improvement followed but death occurred three days after the operation. Symonds in 1885 removed a concretion from an appendix without opening the peritoneal cavity. The first successful operation for the removal of the appendix was performed by Morton in 1887 and from that time the operation has become common. We have then answered the question, "When was the first operation for appendicitis performed?" by showing that appendix abscesses have been opened many centuries ago; that Hancock in 1848 incised an appendix abscess before fluctuation could be felt; that Krönlein in 1884 removed a perforated appendix but the patient died; and that Morton in 1887 had the first successful case of appendicectomy.

NEWS ITEMS.

The Nobel Prize.—The Nobel prizes, of the value of \$38,500 each, were awarded on December 10th, 1907. The prize for the "greatest benefaction to mankind by a discovery in medicine in recent years," was awarded to Professor Laveran, of Paris, discoverer of the hematoozon malariae.

The Archives of Diagnosis.—The first number of the Archives of Diagnosis, the new quarterly edited by Dr. Henrich Stern, has just appeared and it is a valuable addition to the medical periodicals of America. The subscription price is only one dollar per year in advance, single copies 50 cents. The publication office is 250 West 73rd Street, New York City.

Information Desired Concerning Cancer.—Dr. Horace Packard, 470 Commonwealth Ave., Boston, Mass., desires information regarding any alleged recoveries or cures of inoperable or recurrent carcinoma of the mammary gland. If any case or cases are known to any one who reads this circular and can be authenticated by facts as to the history and condition prior to recovery and the length of time which has elapsed since recovery, such information will be much appreciated and duly acknowledged. Any well-authenticated reports of recoveries from carcinoma located in other parts than the mammary gland will be welcomed.

Cancer paste cures, X-ray cures, radium cures, or cures as result of surgical operation are not wanted. Hearsay cases are not wanted unless accompanied by name and address of person who may give knowledge first hand.

NEISSER'S ANTISYPHILITIC SERUM.—Professor Neisser has, it is announced, returned from Batavia, where he has been studying syphilis in apes. From a large number of experiments, he has come to the conclusion that it is impossible to obtain a serum that will produce immunity. He has successfully inoculated apes which had been infected twice before and twice cured. A radical cure of the disease is possible by treatment with mercury and iodide and also atoxyl. During his mission, which extended over three years, he was able to convince himself that the serum diagnosis is useful and affords a reliable test of complete cure.

ANNOUNCEMENT OF SCHOLARSHIPS AND FELLOWSHIPS.—The Rockefeller Institute for Medical Research purposes to award for the year 1908-1909 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the Institute in New York City, under the following conditions:

The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, physiological and pathological chemistry and experimental surgery.

They are open to men and women who are properly qualified to undertake research work in any of the above mentioned subjects and are granted for one year.

The value of these scholarships and fellowships ranges from eight hundred to twelve hundred dollars each.

It is expected that holders of the scholarships and fellowships will devote their entire time to research.

Applications accompanied by proper credentials should be in the hands of the Secretary of The Rockefeller Institute not later than April 1st, 1908. The announcement of the appointments is made about May 15th. The term of service begins preferably on October 1st, but, by special arrangement may be begun at another time.

Beginning with the April issue, "*The Electro-Therapeutist*," formerly published by H. C. Bennett, M. D., of Lima, Ohio, will be consolidated with *Albright's Office Practitioner*, Philadelphia. There will be no change in the title, policy or management of the latter journal, the only change being an increase of the number of pages.

CITY HOSPITAL, NEW YORK. — Examinations for internes to the House Staff of this Hospital will be held on March 27 and 28 of this year, in New York City. The City Hospital has a large general service, with about 800 beds, comprising all branches of medicine, and the length of service is 18 months. All applications for the position should be addressed to the Chairman of the Examination Committee, Dr. Smith Ely Jelliffe, 64 West 56th St., New York.

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calomel, carbonates of sodium and potassium, saltpetre, alum, and the sulphates of iron and copper. Such, in brief, is the state of medical knowledge in China at the present day.

The First Operation for Appendicitis.

—The question is often asked says the *Lancet* editorially,¹ "When was the first operation for appendicitis performed?" We have been asked it this week almost exactly in these words. The answer must depend greatly on what is meant by operations for appendicitis. If we may include among such operations the evacuation of an abscess resulting from an attack of appendicitis we must go back a very long way indeed. Doubtless many such abscesses were opened ages before any record of such operations was made. Aretæus, who flourished some 50 years before the commencement of the Christian era, says: "I once made an incision into an abscess in the colon on the right side near the liver and much pus gushed out." This may have been an appendix abscess but he goes on to say that much pus also was evacuated with the urine, so we cannot be sure that it was not a pyonephrosis. Here and there through the following centuries we find cases recorded which are fairly certainly examples of incision of an appendix abscess but it was not till 1759 that we meet with an operation for abscess which was definitely shown to be due to disease of the vermiform appendix; in that year Mestivier incised an abscess on the right side of the abdomen near the umbilicus and much pus was evacuated. The wound healed but the patient died before long and at the necropsy a pin was found in the appendix with many signs of inflammation. Seven years later Lamotte described a large faecal concretion in the appendix but the discovery was only made post mortem. In 1848 Hancock reported the opening of an abscess immediately above Poupart's ligament on the right side and later two faecal concretions came away. The incision was made early, even before fluctuation could be detected. In 1867 Parker published four similar cases and from that time the opening of abscesses in the right iliac fossa became less rare. The earliest suggestion to remove the appendix appears to have been made by Fen-

¹The London *Lancet*, Jan. 18, 1908, p. 194.

¹Feb. 1, 1908, p. 388.

wick in 1884 and this operation was performed by Krönlein in the same year. He opened the abdomen of a boy aged 17 years who had general peritonitis and ligatured and removed the perforated appendix. Some temporary improvement followed but death occurred three days after the operation. Symonds in 1885 removed a concretion from an appendix without opening the peritoneal cavity. The first successful operation for the removal of the appendix was performed by Morton in 1887 and from that time the operation has become common. We have then answered the question, "When was the first operation for appendicitis performed?" by showing that appendix abscesses have been opened many centuries ago; that Hancock in 1848 incised an appendix abscess before fluctuation could be felt; that Krönlein in 1884 removed a perforated appendix but the patient died; and that Morton in 1887 had the first successful case of appendectomy.

NEWS ITEMS.

The Nobel Prize.—The Nobel prizes, of the value of \$38,500 each, were awarded on December 10th, 1907. The prize for the "greatest benefaction to mankind by a discovery in medicine in recent years," was awarded to Professor Laveran, of Paris, discoverer of the hematogenous malarial parasite.

The Archives of Diagnosis.—The first number of the Archives of Diagnosis, the new quarterly edited by Dr. Henrich Stern, has just appeared and it is a valuable addition to the medical periodicals of America. The subscription price is only one dollar per year in advance, single copies 50 cents. The publication office is 250 West 73rd Street, New York City.

Information Desired Concerning Cancer.—Dr. Horace Packard, 470 Commonwealth Ave., Boston, Mass., desires information regarding any alleged recoveries or cures of inoperable or recurrent carcinoma of the mammary gland. If any case or cases are known to any one who reads this circular and can be authenticated by facts as to the history and condition prior to recovery and the length of time which has elapsed since recovery, such information will be much appreciated and duly acknowledged. Any well-authenticated reports of recoveries from carcinoma located in other parts than the mammary gland will be welcomed.

Cancer paste cures, X-ray cures, radium cures, or cures as result of surgical operation are not wanted. Hearsay cases are not wanted unless accompanied by name and address of person who may give knowledge first hand.

NEISSER'S ANTISYPHILITIC SERUM.—Professor Neisser has, it is announced, returned from Batavia, where he has been studying syphilis in apes. From a large number of experiments, he has come to the conclusion that it is impossible to obtain a serum that will produce immunity. He has successfully inoculated apes which had been infected twice before and twice cured. A radical cure of the disease is possible by treatment with mercury and iodide and also atoxyl. During his mission, which extended over three years, he was able to convince himself that the serum diagnosis is useful and affords a reliable test of complete cure.

ANNOUNCEMENT OF SCHOLARSHIPS AND FELLOWSHIPS.—The Rockefeller Institute for Medical Research purposes to award for the year 1908-1909 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the Institute in New York City, under the following conditions:

The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, physiological and pathological chemistry and experimental surgery.

They are open to men and women who are properly qualified to undertake research work in any of the above mentioned subjects and are granted for one year.

The value of these scholarships and fellowships ranges from eight hundred to twelve hundred dollars each.

It is expected that holders of the scholarships and fellowships will devote their entire time to research.

Applications accompanied by proper credentials should be in the hands of the Secretary of The Rockefeller Institute not later than April 1st, 1908. The announcement of the appointments is made about May 15th. The term of service begins preferably on October 1st, but, by special arrangement may be begun at another time.

Beginning with the April issue, "*The Electro-Therapeutist*," formerly published by H. C. Bennett, M. D., of Lima, Ohio, will be consolidated with *Aibright's Office Practitioner*, Philadelphia. There will be no change in the title, policy or management of the latter journal, the only change being an increase of the number of pages.

CITY HOSPITAL, NEW YORK. — Examinations for internes to the House Staff of this Hospital will be held on March 27 and 28 of this year, in New York City. The City Hospital has a large general service, with about 800 beds, comprising all branches of medicine, and the length of service is 18 months. All applications for the position should be addressed to the Chairman of the Examination Committee, Dr. Smith Ely Jelliffe, 64 West 56th St., New York.

THE AMERICAN MEDICAL DIRECTORY.—It has been reported that a second edition of the American Medical Directory would not be published. This we are glad to state is not true. The first edition is not perfect and contains a considerable number of errors and omissions. But it is such a vast improvement on any previous directory and its general typographical appearance is so pleasing that it is well worth being reprinted from time to time with all necessary corrections. The present style of the book is admirable and it is to be hoped that the size will not be increased by adding any further data to each name. The time, expense and energy can much better be spent in increasing its accuracy, thus making it what it can and should be the standard directory of American physicians.

LITERARY NOTES.

There are more than a few good works on minor surgery, but none will surpass in practical conciseness a very recent book¹ by Edward Milton Foote, M. D. The arrangement of this volume is particularly attractive and it is full of meat for the physician who aspires to do only the minor surgery that is encountered in every day practice. The teaching is sound and it is beautifully printed and illustrated. Dr. Foote has done a real service to the general members of the profession and his book deserves widespread circulation.

So important a place are the opsonins now assuming in medical practice and so scattered is the literature concerning them that the general idea of the whole subject as presented in the *Opsonic Method of Treatment* by R. W. Allen, M. B., B. S., is most opportune. The American edition of this work is controlled by P. Blakiston's Son & Co., of Philadelphia.

The American Journal of Orthopedic Surgery enters upon the new year larger in size, stronger in text, more attractive in form and illustration,—and more widely read. We understand that its subscription lists lately have so largely increased that it

now probably enjoys widest publicity among similar periodicals devoted to other specialties. A series of Monographs, by such leading thinkers as Feiss, Bradford, Ridlon, Goldthwaite, Sayre, Peckham, Taylor, and others, now appearing, will tend to a still greater appreciation during 1908. The Journal, which is the official organ of the American Orthopedic Association, is the only periodical in English devoted exclusively to orthopedic surgery.

The new quarterly, the *Archives of Diagnosis* is the latest aspirant for professional favor. Of all the new journals that have appeared in recent years, this would appear to have the most logical reasons for existence for it is the only publication in the world devoted exclusively to diagnosis and prognosis. If this first number is an index of the future, the success is assured and few medical men will fail to avail themselves of the very valuable material to be found in its pages.

The *Archives* is to be edited by Dr. Heinrich Stern, one of the best known physicians in America, and a diagnostician of recognized ability.

The custom on the part of some of our leading American medical journals of making their January issues special progress numbers is greatly to be commended. Two this year are particularly noteworthy, the *Interstate Medical Journal* and the *American Journal of Clinical Medicine*.

The *Interstate Medical Journal* for January is a splendid issue, devoted to a comprehensive resumé of the medical literature of 1907. Every department is well represented and the various writers in charge of each branch have made short, practical references to the significant contributions of the year. This issue makes a very valuable addition to the library of the progressive physician and itself alone is well worth the price of an annual subscription.

The January issue of the *American Journal of Clinical Medicine* is likewise praiseworthy and contains a vast amount of exceedingly interesting material. Its articles are notable for their practical, readable character as well as the world of useful information which they present. These

A TEXT-BOOK OF MINOR SURGERY.—By EDWARD MILTON FOOTE, A. M., M. D., Instructor in Surgery, College of Physicians and Surgeons, New York. Cloth, royal octavo, pp. 750, with 407 illustrations from original drawings and photographs. New York, 1908: D. Appleton & Company.

two issues of two strong medical journals furnish a splendid argument for the progressive tendencies of independent medical journalism.

The Borderland of Epilepsy is the suggestive title of the third series in Sir William R. Gowers' famous lectures on diseases of the nervous system of which P. Blakiston's Son & Co., of Philadelphia, are the publishers. Faints, Vagal and Vaso-vagal Attacks, Vertigo, Migraine, Sleep Symptoms, etc., are fully treated. For the most part this series of lectures will be found to have a wider importance than their mere relation to epilepsy would suggest.

A very important volume—*Ophthalmic Operations*, by Docent Dr. Josef Meller, of Vienna, whose wonderful operations have made him world-known in ophthalmic practice, will shortly come from the presses of P. Blakiston's Son & Co., of Philadelphia. The English translation, which is being made direct from the manuscript, is nearly completed. The book will be handsomely illustrated.

Upwards of three hundred thousand copies of Dr. George M. Gould's standard medical dictionaries have been sold—and the demand goes merrily on. A success of this kind can only be founded on great intrinsic merit. In the United States, Canada and Great Britain there are approximately 210,000 physicians, students and nurses. A large number of professional men must therefore have copies of several of the various editions, for it is not conceivable that every physician, student and nurse is a purchaser. It is conceivable, however, that those who, as students, have bought the "Pocket" or the "Student's" edition, will buy the "Practitioner's," the "Illustrated" or the "Supplement" when, in professional life, they find the need for wider information. To have produced something which is successful brings to its producer a sense of pride; when, however, the "something" is a series of books of literary merit which have helped thousands to a better understanding of the science which they have chosen for a profession, this sense of pride, as publishers, become

one of high appreciation for the tireless worker who, as author and designer, has achieved such a notable success.

BOOK REVIEWS.

Manual of Embryology.—By J. PLAYFAIR McMURRICK, A. M., Ph. D. Third edition. P. Blakiston's Son and Co., 1907.

The science of the evolution of the human embryo, as considered by McMURRICK in this volume of over 500 pages, will be found of inestimable value to the student. The numerous increase in contributions to this branch of biology necessitated the preparation of this, the third, edition. The book has been revised, enlarged, and all of the newer subjects considered. It is well arranged, concise and clear.

A Laboratory Manual of Invertebrate Zoology.—GILMAN A. DREW, Ph. D. W. B. Saunders Company, Philadelphia and London.

This manual is prepared from and based upon the laboratory directions of the members of the staff of instructors in zoology at the Marine Biological Laboratory of Woods Hall, Massachusetts.

In these days of laboratory teaching, a form of instruction which is gradually superceding the older form of didactic lecturing, the laboratory manual, with its short concise sentences, its large amount of information in small space, its mixture of theoretic knowledge, practical information and student's experiments is gradually becoming the most important factor of modern teaching.

This little volume, small in size only, we consider a splendid book to put in the hands of a beginner in the study of invertebrate zoology.

BOOKS RECEIVED.

The Production and Handling of Clean Milk.—By KENELM WINSLOW, M. D., M. D. V., B. A. S. (Harv.). Publishers, Wm. R. Jenkins Co., 851-853 Sixth Ave., New York, N. Y.

A Clinical Atlas.—Variations of the bones of the Hand and Foot.—By THOMAS DWIGHT, M. D., LL. D., Parkman Professor of Anatomy at the Harvard Medical School. Publishers, J. B. Lippincott Co., Philadelphia and London.

The Pyonex.—Its Theory and Practice.—By W. B. RULE, M. R. C. S., L. R. C. P. Publishers, John Bale, Sons & Danielsson, Ltd., Oxford House, 83-91 Great Titchfield St., Oxford St., W., London.

Transactions of the Maine Medical Association, Vol. XVI, Part I. Stephen Berry Co., 1907.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. VII, 1907.

The Conquest of Cancer.—A plan of campaign. Being an account of the treatment of malignant growths by specific or cancerotoxic ferments. By C. W. SALEEBY, M. D., F. R. S. (Edin.). Frederick A. Stokes Company, New York, 1907.

The Preparation of Catgut for Surgical Purposes.¹—Lister says that catgut should fulfill the following conditions: It should, after soaking in water or blood serum, be strong enough to bear any strain to which it may be subjected, and should hold perfectly when tied in a reef knot. It must not be so rigid as it lies among the tissues as to have any chance of working its way out by mechanical irritation. Nor should it be too quickly absorbed, but should be consumed so slowly by the cells of the new tissue that grows at its expense that, in the case of the ligature of an arterial trunk in its continuity, it may serve sufficiently long as a support for the substitute living thread in its embryonic condition. At the same time it is essential that the catgut be securely aseptic when applied. Chromium sulphate is an ideal substance for the preparation of catgut, with the exception that it is utterly untrustworthy as a germicide. This defect is easily remedied by the addition of a little corrosive sublimate. The preparing liquid must be twenty times the weight of the catgut, and is prepared by mixing the following solutions: (a) Corrosive sublimate, 2 grains; distilled water, 320 minims. (b) Chromic acid, 4 grains, distilled water 240 minims, to which is added enough sulphurous acid to give a green color. The catgut is kept twenty-four hours in the preparing liquid and is then dried on the stretch. But while the substance of the catgut is antiseptic as well as aseptic, its dry surface is liable to contamination by contact with septic material, and it is essential that, before being used, it is washed with some trustworthy germicidal liquid. The writer puts the catgut, like the instru-

ments, in 1 to 20 solution of carbolic acid about a quarter of an hour before the operation is begun.

The Treatment of Hemoptysis.¹—In seven cases of hemoptysis Broga used amyl nitrite and the hemorrhage on fifteen occasions was arrested as if by magic; blood ceased to accumulate in the bronchial passages, and thus the evil effects of its decomposition were avoided. Five or six drops of amyl nitrite on a wad of cotton were inhaled, and the hemorrhage ceased at once and did not recur in the majority. The inhalations were repeated several times afterward during the day. It proved effective, even in cases in which no other treatment had given relief. Broga augmented the nitrite by enemas of gelatin to which calcium chlorid had been added, with fluid extract of hydrastis internally. Since this method has been adopted no patient has died from hemoptysis, and whenever it appears it is controlled at once.

SURGICAL HINTS.

To prevent unsightly scars, incisions should be made on the slant rather than at right angles to the surface.

In cases of relapsing epididymitis the prostate is often the source of infection even when distinct signs of chronic urethritis are absent.

One of the most important criteria of a well-fitting pessary is that the finger can pass fairly easily between its sides and the vaginal wall.

If in removing adenoids the mass is seized below and gradually stripped off from the mucous membrane, it can be more quickly and completely removed.

In operating under local anesthesia in diabetic patients it is well to omit the use of suprarenal preparations, as in these cases it is liable to favor the occurrence of gangrene.—*Inter. Jour. of Surgery*.

¹ Lord Lister, *British Med. Jour.*, Jan. 18, 1908.

¹ A. Broga, M. D., *Gazetta degli Orpedali*, Dec. 22, 1907.

American Medicine

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The United States Pharmacopeia is a worthy, respectable publication of well defined scientific value. As a compilation of the pharmacological and chemical facts generally accepted by competent investigators at the time printed, it has a distinct place in medicine and therapeutics, and medical men owe it to themselves to become more familiar with its utility. It has its shortcomings and its errors, which can be easily and properly corrected if physicians will only take a broader interest in its contents and scientific bodies will fulfil their duty more fully in aiding in its revision. Unfortunately each revision has fallen on the shoulders of too few men. That they have been able to accomplish what they have is ample evidence of hard, painstaking work, and in the main, each revision of the U. S. Pharmacopeia has been representative of professional opinion and knowledge.

American Medicine has no patience with the hasty and vicious criticisms of the Pharmacopeia that have been so freely expressed. The Revision Committee would have welcomed any suggestions or competent assistance that would have contributed in any degree to the accuracy or usefulness of the Pharmacopeia. But alas, those most given to criticism are usually least inclined to constructive work. The members of the Revision Committee therefore deserve nothing but credit for the results they have accomplished, even in the absence of the assistance they had every right to expect and should have had.

But the Pharmacopeia is not a working manual for practicing physicians and under the present system of revision it can never become such. Any medical man therefore who limits his armamentarium to U. S. P. products is not only bound to restrict his usefulness and hamper his efficiency, but is also running the unnecessary risk of being several years in the rear of therapeutic progress. This is so evident that any statement to the contrary is mere sophistry. Instead, therefore, of following blindly those who would make the Pharmacopeia a fetish to be fanatically worshipped, the thinking physician will justify his intelligence and fulfil his professional duty far more by rationally considering this good and useful book in its legitimate role as a work of authoritative reference.

In regard to the National Formulary, however, let no medical man make the mistake of believing it to be anything else than just what it is, a manual largely devoted to the possibilities of substitution and sophistication. Certainly if a physician prefers to use the formulas set forth in this work, he is strictly within his rights and it is nobody's business but his own. But when any other physician's ethical standing is made more or less contingent on his limiting his remedies to the formulas of the National Formulary,—or to U. S. P. products for that matter,—it is high time to call a halt and look for the underlying motives of such dogma.

In all the annals of modern medicine no greater act of sharp practice has ever been recorded than the current attempt to invest the National Formulary with authority which it does not and never will possess, by linking it with the U. S. Pharmacopeia. The Pharmacopeia is honest, a work of scientific research and investigation, and instigated by no selfish nor ulterior motives. The National Formulary on the other hand is practically made up of formulas imitating as closely as possible the proprietary remedies or products that have been found most useful and valuable by the medical profession. The compilation of these formulas of itself should be enough to excite suspicion, if nothing else. But when they are actively urged upon the profession by hired representatives of druggist associations, and by every known method of promotion, as is being done in this country today, the independent physician will do well to look into the proposition sufficiently to ascertain whether the movement after all is as wholly and disinterestedly in his behalf as it purports to be!

American Medicine does not seek to create any prejudices against honest pharmacists, nor to do them the slightest injustice. The men who are engaged in the drug business in this country compare most favorably as a class and as individuals with those identified with other business enterprises. They have their problems and their difficulties and are doubtless meeting them with courage and intelligence. But this movement on the part of a few agitators in pushing N. F. products to the front is sheer unadulterated commercialism—and nothing else. If these zealous promulgators had placed this campaign in its true light from the first, and honestly taken the stand that

the druggist is entitled to make the most of himself, that he should strive to increase his business by demonstrating his ability to serve the medical profession, the movement would have been dignified and worthy of respectful attention. But when such a crusade starts out with attacks on the morals and abilities of physicians in general and takes the position that it is solely to benefit the benighted medical men of the country, to raise their ethical status and to clean up the medical profession, it is despicably hypocritical and unworthy of the slightest respect.

The physicians of America have their shortcomings. Plenty of evils exist in professional affairs. But we are not ready to seek absolution from the druggists just yet, and when we are, they will have to come to us with somewhat cleaner hands and somewhat purer motives.

The honest pharmacist, therefore, might just as well recognize now as later that the National Formulary movement is not of a character to establish a permanent *entente cordiale* with the medical profession. It comes too close to trying to acquire worldly goods in a way that in earlier days left many a mute but eloquent figure dangling at the yard arm. Piracy never did and never will establish any long or lasting friendships.

The abolition of small-pox quarantine has been decided upon by the Minnesota State Board of Health (*Minn. State Med. Jour.*, Jan. 1) on the ground that it has proved inefficient, unscientific and unreliable and that the vaccinated are fully protected without it. Local boards of health must look after the protection of the community. The plan is said to work perfectly in other states, and it does seem that in time it will become universal. The only ones in danger are the anti-vaccinationists, and as they

claim that vaccination is of no use, there is nothing to be done for them. They must now have the courage of their convictions.

Home Treatment of Small-pox—Upon notification of a case the authorities need not remove it from the house, but all the inmates and neighbors may be vaccinated or run the risk—just as they please. This is not democracy run wild, but the highest expression of the rights of man—particularly the sick man who in this 20th century is not to be considered a pariah, but perfectly harmless to the neighbors if they will only have sense enough to take advantage of what medical science offers so freely. The only danger is to young neighboring infants not yet vaccinated and too feeble for it or who happen to be ill of other diseases, but these cases having been exposed to infection would require vaccination even if the patient were removed. All the older children are presumed to be protected, for if the parents have not attended to it, it is foolish to expect society to take on paternalism to such an extent.

To object to compulsory vaccination of school children may sound like heresy now, but there is plenty of evidence of a change of professional opinion even in this. Parents whose children are properly vaccinated have no cause to worry about the unvaccinated school mates, nor of any variola which might be brought to the school room.

The harmlessness of tobacco in moderation seems to be conceded by the great majority of physicians and it is difficult to account for the numerous statements to the contrary, particularly in the school physiologies. The popular prejudice against the cigarette is still more amazing in view

of the absence of any proof that it is harmful except to very immature boys. Of course excessive use of tobacco has well defined symptoms, and there are a few people to whom a very limited indulgence is excess, but in the hundred of millions who use it in one form or another, there is astonishingly little evidence of injury.

The usefulness of tobacco has received so little scientific attention that practically nothing is popularly known of this side of the question. Such a world wide custom must serve some useful purpose as it can be taken for granted that useless or harmful habits do not survive in any species of animal. It is our duty to find out what the benefit really is. The acute poisoning in those unaccustomed to it, is so well described in the text books as to need no comment; what is needed is knowledge of the effect of small amounts in those accustomed to it. The after dinner cigar has been said to increase the flow of gastric secretion and hasten digestion, and yet that alleged fact has been vehemently denied and the reverse asserted. The real use of tobacco is in some obscure sedative effect upon the nervous system, particularly the higher cerebral cells, though the effect of larger indulgence is exciting to the point of delirium.

Mankind has instinctively found that it is comforting in some way which no one can describe, and womankind—much to the astonishment of the northern races—is discovering the same fact.

Deprivation of tobacco is the severest punishment for a convict. An army deprived of it is so inefficient that it may become demoralized and suffer defeat. It is not at all unlikely that the work of civilians is also dependent upon the effect of the drug, and that if the trade were destroyed

civilization would suffer. These seem rather radical views to the large number who do not use tobacco, but its enormous consumption permits no other opinion. Indeed there is now and then a hint that the abstainers as a class do not sustain as heavy burdens as they could, nor as long as they could, if they had the assistance of tobacco. In the absence of exact data, these discussions are bootless, but such knowledge as we possess places the burden of proof upon those who claim that the drug is always harmful and never of use. The opposition to tobacco is wholly unaccountable—even the ethical statement that it is the first step to the saloon and brothel, is disproved by those who have not taken those steps. The outcry against tea and coffee is readily understood for most of it comes from those who have an alleged substitute to sell for these essentials of modern life:

The effect of tobacco upon nearly grown boys has always been assumed to be harmful, and the majority of physicians would doubtless advise abstinence until full maturity. It is rather startling then, to learn that Dr. Geo. L. Meylan, physical director of Columbia University, has found that the students who use tobacco are taller, heavier and stronger than the abstainers, and that the difference is more than would be accounted for by the slightly greater age of the former. It may not prove that the drug has been beneficial, but it does prove that we were wrong in assuming that boys were stunted by its use. The investigations of recent years have shattered a great many medical opinions of great age, and this seems to be another instance. What a comment it all is upon our very human propensity to form theories before we hear the facts. Hereafter

let all theorists present their facts first and let the anti-cigarette laws wait until it is proved they are needed. At present they create ridicule and contempt of law, for they cannot be enforced.

Anti-vivisection has again been thrust upon public attention—this time by the Society for the Prevention of Abuse in Animal Experimentation, a society which should be renamed for it seems to be organized to foster abuse of humanitarians engaged in animal experimentation. These “good” but misguided people have introduced into the New York Legislature two bills to regulate biological work. Happily, in the more noble Society for the Prevention of Cruelty to Animals, there are a few workers who are openly defending animal experimentation as a necessity of civilization. The fanatics who wish to stop all such investigation are losing caste even among their own people, and their public meetings are exciting ridicule and disgust. Sensible people recoil from those so mentally unclean as to imagine the horrors falsely alleged to exist. Indeed the assertions carry their own denial even if the public were not tired of the brutal fanatics who would prefer their own children to die, if salvation necessitated a little discomfort to a few rabbits. The new crusade acknowledges the need of experiments but wishes to regulate them to prevent cruelty. They make the false assumption that there is much preventable suffering.

The absurdities of the anti-vivisection bills have not been stated with sufficient particularity. One includes only vertebrate animals, but it is not logical to have such tender regard for the lowest vertebrates whose pain sense is obviously feeble yet

ignore the higher invertebrates which might have more acute sensibility. If the lowest invertebrates are to be included, so must the "sensitive" plants. Then again, the impossibility of deciding what is painful will nullify every such law. The equanimity with which a trapped bear for instance will chew off its own foot in order to get loose, does not argue much sensibility and a frog has far less. Nor does the bill define "an experiment calculated to cause pain or distress," and to require an anesthetic for mere distress is folly when a farmer is permitted to castrate domestic animals without anesthesia and in a dirty way which oftens causes subsequent intense suffering from infections, nor is there the least objection made to the manner of slaughtering animals for Jewish buyers nor of the repeated bleedings of calves to make white veal for finicky ladies.

Exceptions would nullify the law for drug and inoculation experiments which might cause more suffering than a small incision are permitted as also are "investigations regarding the communicability of human or animal diseases." Not even a "Philadelphia lawyer" would be needed to break it, and it is amazing that any attorney would concoct such a fragile measure, but anything may be expected from one who has the audacity to invite physicians to join with him in making a law which will punish their own "useless brutality." The bill also prohibits a court from ordering certain necessary experiments and might interfere with the course of justice.

Private experiments would be ended as the law would place all the work under constituted medical authority. This is the

most dangerous part of the bill for as a matter of fact the greatest modern advances have been made by men outside of the schools—Jenner, Pasteur and Koch. It is common knowledge that Virchow never quite forgave Koch nor fully accepted the modern facts discovered by this rank outsider. The prohibition of demonstrations of "facts which have already been proved" except as part of a course of instruction, would prevent the discovery of errors of old experiments. Indeed there are no facts of this nature so absolutely proved that revision is not necessary. It would become impossible for any outsider to show that "proved facts" might not be facts at all.

The bill provides no inspectors to decide what would constitute violation of the law. If these are to be fanatical laymen, all medical discovery is at an end, and if they are to be biological workers the matter is just where it is now, with the exception that jealousy might urge a biologist to end the work of a rival. It is doubtful if Koch would have been permitted to discover the cause of tuberculosis if Virchow had had the power to prevent such "useless" animal experimentation.

The biologists themselves will prevent cruelty of co-workers. It is a notorious fact that the only case of real cruelty coming to our knowledge was that of a university teacher whom *American Medicine* condemned at the time, and his experiments would have been permissible under such a law. The medical profession itself will be more efficient in preventing cruelty than any possible legal machinery in the hands of the very ones who might be guilty of abuses. Scientists as a class

are as tender hearted as the rest of humanity, if not more so, and the attempt to make them out brutes is poor business for lawmakers as well as insulting. Continued human existence demands that all the bills be promptly killed for such legislation has practically destroyed biological investigation in Great Britain whose workers must go to the continent to dig out new facts.

The necessity of sobriety in civilization has been commented upon quite frequently of late, as it has at last been realized that we are daily compelled to place our lives in the keeping of engineers, pilots, motormen, teamsters and a host of other workmen, who in a moment of alcoholic befuddlement might cause fatal "accidents." It now appears that one railroad has adopted a policy, in promotions or in weeding out when the force is reduced, of giving preference to total abstainers. Another great road has gone a step further and will employ only abstainers in certain classes. It is not a matter of sentiment, morality or hygiene but one of business solely, for with abstainers the road has fewer losses and more profits. Employees by the thousands are signing the pledge merely as a means of obtaining a livelihood.

Business requires clear wits and there is an increasing demand among all employers that even their clerks shall be abstainers. Experience shows that drinking men are apt to fail in getting orders, due to slight loss of judgment at critical times. Thus the matter of bargain and sale seems destined to do more for total abstinence than a century of fanatical appeal to the emotions. It is now rumored that in armies both here and in Europe it is found that the mental perversion and enfeeblement due to the brain changes caused by long continued excesses, are so disabling that mili-

tary efficiency demands the elimination of the heavy drinker. Young men in every walk of life must learn, that though drinking was once a social necessity, abstinence may soon be fashionable. At any rate success in life may depend upon abstinence. Thus the new civilization may eliminate many of the diseases due to alcoholic excesses.

The prohibition wave which is sweeping the country is entirely too complicated a matter to be dismissed with a word. In the south it is so largely a question of keeping liquor from low class negroes, for it frenzies them to the commission of unspeakable crimes. It has long been unlawful to sell or give liquor to Indians, because it stirs them to murder, but in the west, prohibition is often an economic necessity to keep farm laborers sober at critical times of harvest, when a whole crop might be ruined. In other places it is for the sole purpose of keeping liquor out of the reach of boys. In every place, the class of men for whom it is not intended can get all they want at short notice. The plan is never entirely restrictive, and may even seem to increase drunkenness, here and there, but that it succeeds in its specific purpose in each locality seems proved or it would be abandoned. Prohibition of open saloons seems to be going hand in hand with civilization's demand for so many abstainers. Curiously enough the consumption of alcohol instead of decreasing seems to be on the increase as though the fewer drinkers took more liquor, a paradox which is now beyond explanation unless we accept the idea that some people have instinctively discovered alcohol to have food value as well as a sedative drug action. And what is still more amazing is the increasing number of capable medical scientists who are coming to be of the opinion that positively nothing is known as to the effects of small daily potions.

ORIGINAL ARTICLES.

INFLUENZA AND GLYCOSURIA.

BY

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Influenza as a cause or intensifier of glycosuria is a well recognized factor. The first appearance of many a case of glycosuria, or at least its recognition, is clearly traceable to an attack of gripe. Of course the detection of glycosuria during or after the influenzal period is no proof that it had not existed previously. However, there are quite a number of well-authenticated instances in which the glycosuric phenomenon first appeared during or shortly after an attack of influenza. It is probable that in many such cases and especially in those in which the phenomenon attained chronicity, the glycosuria would, nevertheless, have supervened sooner or later. In other words, a predisposition to the glycosuric state is likely present in many cases in which glycosuria tending to a chronic course was brought to light during or after the influenzal period.

There must occur, however, a number of instances in which the influenzal invasion is the direct cause of glycosuria, diabetes mellitus or diabetes insipidus, and in which a previous latency of these conditions is entirely out of question. I have here in mind at first glycosuria originating in childhood after an attack of influenza, and then certain "neurogenous" forms of diabetes, characterized by a small output of urinary glucose, arising mostly in the non-obese individual after the 35th year of age, shortly after an attack of influenza.

I have maintained for a number of years that a large proportion of the instances of

diabetes in children is due to entirely different causes than is the usual diabetic affection ushered in between the fourth and fifth decennary of life. The origin of many, if not most cases of diabetes in early life, can be definitely fastened to the period of apparent reconvalescence from an acute infectious disease. I have seen diabetes in children which had supervened in the wake of rubeola, scarlatina, diphtheria, influenza, pneumonia and meningitis. In such instances, it seems, that not any one abdominal organ is at fault, as is likely the case in diabetes of declining life, but that there exists a lesion somewhere in the nervous system which must be due to the invasion of toxic material. The grippal poison, which is to be dreaded more on account of its mediate than immediate influence, undoubtedly may find its way to the nerve centers where its injurious work may be reflected by the diabetic phenomena.

The association of glycosuria with influenza is often of a decidedly transitory nature. Sugar may appear during the influenzal attack, or shortly after the termination of the febrile state, just on one or two occasions. There is little doubt that this transitory glycosuria is frequently overlooked, but it is certainly not as inevitable an occurrence as one author (Frankhauser) want us to believe, who maintains that he found sugar in the urine of all influenza patients.

On the other hand, there is a proportion of instances of pre-existing glycosuria which becomes favorably influenced by an intercurrent attack of influenza. In such cases, the glycosuria ceases often entirely or its degree becomes markedly diminished for a certain period. In a few instances of my experience the tolerance for carbo-

hydrates after an influenzal state continued to remain noticeably decreased, and the entire diabetic syndrome assumed a permanent milder character.

The relation of influenza to glycosuria may be four fold:

First: Influenza may intensify the degree of a pre-existing glycosuria.

Second: It may render active a dormant or masked diabetic state.

Third: It may call forth glycosuria where it never existed in a latent state.

Fourth: It may suppress or diminish an existing glycosuria.

An intercurrent attack of influenza may intensify the degree of an *existing glycosuria* and almost inevitably aggravates the other diabetic phenomena and concomitants. I have found that influenza does not exert as frequent and as marked an unfavorable influence upon the glycosuria than it does upon other diabetic symptoms and accompaniments. Neuritic affections, so common in a certain class of diabetics become readily aggravated by the influenzal poison; angio-sclerotic processes often manifest themselves in a more pronounced form after an attack of influenza; a renal complication accompanying the diabetes may assume a graver character, and the bodily decline of the diabetic may progress rapidly after an influenzal invasion. There is great tendency to chronic pulmonary disease in the diabetic after an attack of grippe, and there is particular danger for him from influenzal pneumonia.

The glycosuria itself is but rarely intensified at the height of the attack of influenza; its augmentation probably never ensues until final defervescence has taken place. During the febrile state, the urine is scanty and the intake of nourishment is

more or less diminished. Absolute and percentage amount of glucose will not, therefore, be found increased during this period, as a rule. In a certain sense, the glycosuric intensification is for these reasons rather of post-influenzal production.

This post-influenzal augmentation of an existing glycosuria often attains permanency, that is, the glycosuria may be of higher degree forever after an attack of influenza. As a consequence of the influenzal state, the tolerance for carbohydrates may become materially reduced; while remaining under a similar diet, diabetics, who, before the influenza, excreted 40 or 50 grammes of urinary glucose, will readily produce twice this amount after an attack. The statement, occasionally made by diabetics, that their disease never discomfited them until after their last attack of grippe, when they were compelled to follow a more rigid dietary than before, is, in fact, well-founded. Until influenza supervened, the diabetic state has often not made appreciable inroads into the organism—a few days of grippe may change the entire picture and the patient may speedily succumb to influenzal pneumonia, or he may remain more or less of a burden, to himself and to others, for the rest of his days.

There are instances in which glycosuric augmentation in the wake of influenza, is but of brief duration, and in which the other diabetic phenomena become little, if at all, accentuated. Such transitory conditions are often of alimentary origin, and appear to be of no special prognostic significance.

The second eventuality, the *outbreak of dormant or masked diabetes into an active process*, the most important symptom of which is the glycosuria, seems a comparatively frequent occurrence. Of course, in a

great number of cases of this category one can never be positive whether influenza brought to light a latent diabetic state or whether well developed diabetes had already existed and was only recognized by an examination of the urine prompted by the influenzal attack. However, as polydipsia and polyuria are mostly of synchronous production with glycosuria, the influenzal or post-influenzal onset of the latter can often be determined with a great degree of certainty. Again, individuals with diabetes in a dormant or larvate state frequently seek medical advice concerning their lassitude, digestive ills, obesity and plethoric conditions, but a lasting glycosuria, although expected by the observant physician, may not be found until the occurrence of a physical or psychical shock, or of an acute infectious disease.

Irrespective of the intercurrent of influenza, the glycosuric stage of diabetes would likely have supervened some time or other in many persons predisposed to it. In a few others, it would probably have remained latent and concealed all through life if the grippal invasion had not taken place. As a general rule, however, diabetes of the obese, and other latent forms of the diabetic state, make themselves evident by permanent glycosuria between the fourth and fifth decennary of life, while intercurrent of influenza (or of another acute infectious disease) may give rise to the glycosuria at a somewhat earlier age.

The patient, of whose disease a brief record is given in the following, undoubtedly exhibited some of the ear marks of latent diabetes before this was rendered active by an attack of influenza.

Mrs. R. E., 35 years old, married, no children, born in Russia, consulted me on

December 20th, 1907, on account of a general state of decline, and a feeling of languor and depression, and psychical agitation. She stated that she had been quite obese since her marriage, that she never was pregnant, that she was taking very little bodily exercise, that unimportant things excite her readily and made her worry, that she was frequently affected with gastric indigestion, sour stomach and eructation of gases, and that she suffered from chronic constipation. An attack of influenza about two weeks ago had still increased her enfeebled condition and had caused excessive thirst, polyuria, dry skin and pruritus.

An examination still revealed evidences of the influenzal invasion, viz., slightly increased temperature, congestion of the nasopharynx, and of larynx and trachea, harsh respiratory murmurs, and some sonorous bronchial sounds. The urine, voided in the office, amounted to 100 c.c. and exhibited the following features, gr. sp. 1039. Albumin (potassium ferro-cyanide plus acetic acid) traces, glucose (Fehling) 6.33%, acetone, none, diacetic acid none, creatinine, small amount. The presence of anatomical elements, pointing to slight renal congestion, was determined microscopically.

On the exclusion of carbohydrates the urine contained about 2% of glucose on the next day, and no sugar at all for three consecutive days. After the ingestion of 100 grammes carbohydrates per day, she again excreted 1.25% to 2.77% glucose. The 24 hours urine has been as high as 2200 c.c.; and as low as 750 c.c., the average amount aggregating 1300 c.c. (This normal or rather subnormal amount of urine, is occasionally met with in neurogenous glycosuria). At present, the acute symptoms of diabetes have somewhat abated but the gly-

cosuria persists unless a rigid antihabetic diet is diligently adhered to.

In the great majority of instances of latent diabetes rendered active by the influenzal poison (or the toxin of any other acute infectious disease) the course and progress of the affection is essentially the same, as if the production of the active, the glycosuric stage, had not been precipitated by an accidental intercurrent. Thus, the glycosuria tends to chronicity. In a small proportion of the pertaining instances the glycosuria proves but of temporary existence. In other instances it is also transitory but it recurs with every subsequent attack of influenza. I recall especially two cases of recurrent glycosuria on the basis of apparently latent diabetes ushered in on each occasion with an attack of influenza. Both cases were those of proposers for life insurance. The one case, a man about 35 years of age, was referred to me in two successive winters in which he had had influenza. In both the winters he had applied for life insurance which was temporarily denied him on account of "diabetes." In the summer following each attack of influenza, alimentary glycosuria could not even be induced with 100 resp. 150 grammes glucose and a life insurance policy was granted him in both instances.

The other case, a man 47 years of age, fearing the presence of sugar in the urine on account of a family predisposition for diabetes, but contemplating additional life insurance, placed himself under my observation after each of three attacks of influenza. On each occasion he had small amounts of glucose in his urine, never more than 25 grammes in the 24 hours, for a period of from six to eight weeks. After

this period, a glycosuria *e amylo* did not ensue until the next influenzal invasion.

The third eventuality, *that influenza may call forth glycosuria where it never existed in a latent state*, is a fact which is hardly ever recognized. The glycosuric conditions arising after an attack of influenza (or of other infectious diseases) in persons who had shown no proclivity for it, generally assumes the "nervous" type. It is usually recognized accidentally—on the occasion of an examination for life insurance, for instance—as, apart from post-influenzal weakness and nerve fatigue, the individual hardly ever exhibits any untoward phenomena. Polydipsia and polyuria, if at all present, are so to a minor degree only. The absolute amount of glucose excreted by the urine hardly ever exceeds twenty or thirty grammes a day, but it will be found that the exclusion of carbohydrates from the nourishment exerts but a very limited influence upon its reduction. While the influenzal invasion generally brings forth a simple continuous or intermittent glycosuria which disappears with the removal of the poisonous influence from the organism, the glycosuric phenomenon may endure much longer than its underlying cause. Thus, glycosuria of influenzal production may occasionally run a chronic course; however, if it does, it usually retains its low degree of intensity for quite a long period. After some time, of course, there may occur alimentary and assimilative disturbances, a permanent state of undernutrition may be set up, and there may be more or less pronounced symptoms of a systemic auto-intoxication. Similar chronic glycosurias are encountered as sequelae of other acute diseases, of injuries and psychic disturbances. They represent the true accidental type of

diabetes which appears to be the expression of a fortuitous lesion in some part of the cerebro-spinal or sympathetic nervous system.

Glycosuria in childhood is nearly always accidental in so far as the youthful organism exhibits a latent glycemie element in but extremely rare instances. Non-diabetic glycosuria ensues much oftener in children than is generally supposed. Were we to examine for urinary glucose in every instance of an infectious disease, especially when the acute phenomenon has subsided, or in every case of traumatism, the glycosuric symptom would be more often met with. Most cases of simple glycosuria in children, with which I became acquainted, had been directly preceded by influenza, rubella, scarlatina, diphtheria, enteric fever, meningitis, pneumonia, acute articular rheumatism, or by some other acute disorder.¹

The fourth eventuality, *that intercurrent influenza may suppress or diminish an existing glycosuria* is an interesting phenomenon which has been confirmed by many observations. A similar disappearance or reduction of an existing glycosuria has been noticed in other acute febrile diseases and certain chronic affections which are apt to complicate the diabetic state. Next to influenza, it is pneumonia and scarlatina, among the acute febrile diseases, which cause most frequently obliteration or decrease of the prevailing glycosuria. According to my experience it is influenza with gastric or nervous complications which intensifies an existing glycosuria, while this may abate or disappear altogether when pneumonia is the influenzal complication. The glycosuria diminishes at the onset of

the fever and invariably attains its lowest degree, or is entirely absent, when the febrile state is at its height. During defervescence the low degree of the glycosuria is generally maintained and it may remain so for a few days after the final subsidence of the febrile period. During reconvalescence the intensity of the glycosuria increases, and this generally reaches its former degree within three or four weeks after the attack.

Naturally, one cause for the diminished glycosuria is the meagre amount of food which is partaken of in an acute febrile disease. This, however, by no means explains the phenomenon, as the tolerance for carbohydrates of these patients is absolutely greater during the febrile attack, than either before or after. The opposite ensues with proteid metabolism, as albumin disintegration becomes greatly enhanced during the febrile stage and remains very active in spite of the lesser ingestion of albuminous material. The reason for the diminished glucose output during the febrile period of an infectious disease may be, as Minkowski suggests, the production of fermentation processes by the bacteria in the tissues whereby the sugar is used up. However, it is possible that the febrile condition as such augments tissue combustion splitting up deposited as well as newly ingested sugar into carbon dioxide and alcohol, and attacking at the same time the body albumin.

A subnormal temperature is frequently the normal temperature of the diabetic, and the normal temperature of the healthy individual (99.2—99.4 F. in the rectum) when encountered in the diabetic denotes often a febrile state. In a certain sense elevation of temperature in the glycosuric subject re-establishes normal conditions in the organ-

¹Heinrich Stern: Duration, Course and Termination of Glycosuria in Children, Arch. of Ped., Aug., 1904.

ism for the time being as the increased oxidation processes do away with the abnormal C, H_2, O_2 contents of tissues and body fluids.

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HEALTH AND SANITATION IN THE DISTRICT OF COLUMBIA, WITH A PLEA FOR A NATIONAL DE- PARTMENT OF HEALTH.

BY

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Death rates are ordinarily accepted as an index to the state of the public health. Within certain limits this can be done with a fair degree of safety, especially when the figures relate to the same community and to periods of time not too far apart. But when an effort is made to compare the death rates of different communities, or of the same community at widely separated periods, the possible variations in the factors that determine the true value of each of the several death rates are so great that the problem becomes one of exceeding difficulty. And when, instead of undertaking to determine merely the state of the public health we go a step further and endeavor to find out from the death rates the salubrity or healthfulness of a place, the task is well nigh impossible. For to accomplish that end we must eliminate from our reckoning everything that pertains to the individual and confine ourselves solely to a study of his environment, since even though many die because of weakness incident to race, or from their own ignorance or poverty, or from occupational diseases or accidents, or from premature birth, the chances of life and of health for the resident, or the prospective resident, who

is not and will not be subjected to such personal dangers are not lessened. For the reasons set forth no effort has been made to compare the state of the public health in the District of Columbia with the state of the public health elsewhere, or to determine the relative salubrity of Washington as compared with other cities. If for the omission of any comparative figures any justification were needed further than what has been given, it could be found in the fact that for the planning and execution of our future work, it is more important to know the character, force, and direction of the currents with which we have had to contend, and to know how successfully and through what means we have held to a forward course, than it is to know just what, for the moment, happens to be our position as compared with that of other communities, more or less dissimilar in composition and environment.

In undertaking to determine the significance of the death rates of the District of Columbia, two circumstances must be borne in mind: First, that although the District of Columbia is politically analogous to a territory, or perhaps more nearly to what we are sometimes pleased to call our insular possessions, rather than to a city, yet for purposes of administration and socially, it is merely a municipality. The density of population computed on the basis of the police census of May, 1906, was 5,437 per square mile of land, far in excess of that of any state or territory; the government of the District is a unit, dealing with sanitary problems and with the people directly and not through the agency of county, city, or town organizations. The terms, "District of Columbia" and "Washington," are commonly used interchange-

ably and are so used in this paper. The second circumstance to be remembered is the large number of persons residing within the District whose blood is colored or at least tinged by a strain of African origin. These colored people make up about 30 per cent of our population, and according to the federal census of 1900, no other city in the United States contained such a large number of colored people, nor in any other city the size of Washington was so large a percentage of the population made up of this class. A constant knowledge of their existence is essential to a proper understanding of our mortality tables since death rates among them are commonly much higher than among the white people. Some of the most important differences appear in the following table:

Ratios between the death rates for white and for colored people in the District of Columbia, from certain diseases, during the five years ended December 31, 1906.

(The death rate for white : the death rate for colored :: 1 : X. The figures in this table represent X.).

DISEASES.	1902.	1903.	1904.	1905.	1906.
All diseases.....	1.86	1.74	1.73	1.90	1.86
Bronchitis, acute.....	8.09	6.55	6.55	28.40	5.46
Broncho-pneumonia.....	8.25	2.57	2.73	8.61	8.78
Convulsions of children.....	6.46	4.46	8.58	5.28	6.77
Diarrhoea and enteritis (under 2 years old).....	8.96	8.84	2.96	8.98	2.87
Hereditary syphilis.....	4.92	6.06	2.74	5.28	7.69
Intermittent and remittent fevers and malarial cachexia.....	1.50	1.81	4.82	8.50	4.20
Marasmus and malassimilation.....	2.11	1.45	1.87	71	2.54
Nephritis, acute.....	2.74	1.18	1.06	2.05	2.54
Pneumonia, lobar, etc.....	2.71	2.98	8.80	8.09	8.84
Premature birth.....	2.85	1.77	2.50	8.09	2.48
Pulmonary hemorrhage.....	8.86	8.85	6.18	5.88	2.98
Rickets.....	6.80	6.11			12.69
Senility.....	1.09	1.40	1.02	1.18	1.00
Scoliosis.....	18	86	28	17	12
Tuberculosis, abdominal.....	2.80	2.27	4.10	4.05	2.59
Tuberculosis, generalized.....	2.25	6.48	8.69	8.71	2.40
Tuberculosis, pulmonary.....	2.70	2.69	8.00	8.18	8.81
Typhoid fever.....	1.09	1.55	1.79	1.83	2.88
Valvular diseases of the heart.....	2.46	1.89	1.88	1.84	2.08
Whooping cough.....	5.58	4.58	4.26	2.59	2.11

That the present relatively high death rate among our colored people is due, in considerable part at least, to racial weakness and not altogether to ignorance, poverty,

and occupation, is shown by a comparison of the death rates of white people living in our alleys and of colored people similarly situated. Analogous figures for our street population are given for purpose of convenient reference. It is probably unnecessary to explain that only the direst poverty ever brings a white man into an alley residence.

Comparing death rates for white and for colored people, living in alley and in street dwellings in the District of Columbia.

Calendar Year	Death Rates per 1,000					
	Alleys			Streets		
	White	Colored	Ratio	White	Colored	Ratio
1905.	18.28	28.89	1 : 2.15	15.17	28.89	1 : 1.90
1906.	14.89	27.78	1 : 1.88	15.47	29.08	1 : 1.88

NOTE:—Alley population in 1905 was: White, 1,739; Colored, 16,659. In 1906: White, 2,155; Colored, 15,652.

Street population in 1905 was: White, 225,689; Colored, 79,036. In 1906: White, 229,262; Colored, 79,366.

Although the mortality of the colored race is even now excessive, yet if human life be a thing of value, there is naught of which Washington has a better right to be proud than of the reduction that has been effected in the death rate of these people; not of her broad avenues and myriads of shade trees, nor of her magnificent public buildings; not of her newly installed sewage disposal system nor of her recently perfected water supply; not of her clean government; but of the saving of lives that has been accomplished. The colored death rate for the five year period, 1875-79, averaged 39.76 per thousand per annum. The corresponding death rate for the five year period, 1900-04, was but 28.27. If the death rate for the earlier period had continued unabated, 3,778 deaths would have occurred among our colored people in 1906, whereas the number that did occur was 2,-

738. Among our 95,018 colored residents, therefore, the lives saved during the one year numbered 1,040. How many have been saved since the reduction of the colored death rate began might readily be computed but in the face of such a showing it seems unnecessary to do so.

Showing relative diminution in the death rates of white and of colored people in the District of Columbia, since 1875:

Period Calendar years.	Death Rates. White	Colored	All
1875-79	19.35	39.76	25.86
1880-84	18.89	33.62	23.85
1885-89	18.61	33.29	23.48
1890-94	19.67	32.57	23.90
1895-99	16.81	28.75	20.69
1900-04	15.93	28.27	19.68
1905	15.16	28.81	19.20
1906	15.46	28.82	19.35

There has been a falling off in the mortality among white people within the same period, from 19.35 per thousand during the first lustrum to 15.93 during the last, but relatively it has not approached the diminution that has occurred in the figures for the colored race. The most interesting feature of the record, however, is the difference in the efficiency with which the same forces during the same period of time have operated to reduce the mortality of the two races.

Just what brought about the lowering in the death rates shown in the foregoing table, it is difficult to say; or, at least it is difficult to define the relative importance to be attached to each of the various factors that have been at work. We vaguely attribute the improvement to better modes of living, or to a better environment, or, it may be, to more skilled medical treatment. But as a guide to future work such explanations are extremely unsatisfactory. We know that although these things may

have reduced the general death rate, they have been associated with an apparently increased prevalence of certain morbid conditions, such for instance as cancer and insanity. We know, too, that to have to improve modes of living generally, or to improve the environment generally, is a very expensive and a somewhat difficult task, and that more skilled medical treatment operates ordinarily only to save him who is already sick, while the great object of the public health service is to prevent sickness. What is needed is an efficient system not merely of accounts of our expenditures for a given line of sanitary work but also of accounts of such expenditures in their proper relation to work done and to ultimate results accomplished, so that future expenditures can be made for work along those lines that are yielding the greatest net results in lives saved and sickness averted. Now we go on making appropriations and enacting laws for the very purpose of reducing the death rate; we compile at a considerable expense tome upon tome of vital statistics; but how successfully each appropriation and each law is applied to the accomplishment of the very end for which it was designed, and if it fails, why it does so, we never know. When the death rate does not budge, empirically we make another appropriation or enact another law, and so we go on and on in the hope that each new measure will be more successful than its predecessor, or, it may be, in blind despair we try to ignore the necessity of doing anything at all.

What has been said is true not merely of the District of Columbia but of the country generally. We spend millions of dollars annually for all kinds of laboratory investigations, many of which tend,

or are supposed to tend, toward the improvement of the public health. To the same end we enact laws and regulations galore, collect much information relative to the cost of administering the affairs of our cities, and compile many and varied conglomerations of vital statistics. In our laboratories we study bacteria, insects, preservatives, coloring matters, and food stuffs. In our experiment stations we investigate the conditions that affect our livestock and our crops. But man himself we have ignored except as he appears from time to time as an incident in the life history of some bacterium, in the chemical reaction of some adulterant, or in relation to some disease of the cow, or the sheep, or the hog. And if it can be said that man as an individual has been ignored, the same thing can be said with even greater assurance and positiveness with reference to mankind in the aggregate. Seemingly we care nothing for the nature and extent of the agencies at work toward the destruction or the conservation of our fellows in our cities and towns, those great crucibles in which the vitality of the human race itself is being tried out. Into these crucibles we are constantly throwing new elements in the form of new laws and new regulations. In them new forces continually appear as the result of changes in social and economic conditions. But no one has the interest, or those having the interest have not the time, to watch and study patiently from month to month and from year to year to determine the net result and the circumstances that have brought it about.

Here and there a health officer snatches a few occasional moments from his well filled day to devote them to a quest for truth. Now and then a city expends a

part of its scant resources toward the same end. Here and there a state has joined in the search for light. But the solitary health officer is like a physician whose opportunity for clinical study is limited to a single patient, and the state that undertakes to segregate and appraise the factors that affect the health of its people is only a little better situated. The early discovery of those methods by the adoption of which our death rates can be lowered, surely, expeditiously, and with a minimum of sacrifice of money and of personal liberty, is not likely if the problem be left to the occasional efforts of health officers or of cities or of states. Their fields for observation and study are too small, and the continuity of effort is too uncertain, to give promise of early results.

If, then, neither the isolated health officer, nor the city, nor the state, can segregate the various conditions and circumstances that tend most strongly to promote the public health, and define the principles that should underlie future sanitary effort, there is but one agency left to undertake the work, and that is the national government. That the United States is engaged to only a limited extent in the direct enforcement of sanitary law is immaterial, for in any event the general government is bound for the common welfare of the nation to take notice of the state of the public health and to do whatever it can to protect and to improve it. Who will say that the federal government has any interest in the natural resources of the country greater or more important than its interest in the life and well-being of man himself, or that action by the federal government can go further toward conserving and improving the one than the other? Yet the

Department of Agriculture received for its work relating to soils and plants, and forests, and birds, and mammals, and live stock, and insects, and weather, and foods and drugs, for use during the current fiscal year, \$9,447,290. And yet who will say that the federal government did not act rightly and wisely in making the appropriation?

I have referred to the appropriation for the Department of Agriculture rather than to that for any other branch of the federal government because the Department of Agriculture is the great scientific workshop of the federal establishment, and because its work seems more nearly analogous to the work that must be done for the protection of the public health. But it would be unfair not to notice the extent to which the work of the Department of Agriculture is itself directed toward the prevention of disease of human beings. Of the \$897,200 appropriated for the general expenses of the Bureau of Animal Industry during the current fiscal year, the Secretary of Agriculture is authorized to employ any part that he may deem necessary or expedient, in such manner as he may think best, for the collection of information and dissemination of knowledge concerning live stock, dairy and other animal products, and for preventing the spread of tuberculosis and glanders. For the inspection of meat and meat products, he has at his command the unexpended balance of \$3,000,000 appropriated permanently for that purpose in June, 1906. The \$584,780, appropriated for the general expenses of the Bureau of Plant Industry, is available for, among other purposes, the investigation of drug, medicinal, and poisonous plants and plant industries, and for the study and discovery

of methods of preventing algal and other contaminations of water supplies. The \$650,000 appropriated for the general expenses of the Bureau of Chemistry, is available in part to investigate the composition and adulteration of foods, drugs and beverages and the effect of cold storage on the healthfulness of foods; to investigate the character of food preservatives, coloring matters, and other substances added to foods, to determine their relation to digestion and to health, and to establish the principles that should guide their use; and to investigate the chemistry of dairy products and of adulterants used therein. The \$113,800 appropriated for the general expenses of the Bureau of Entomology is, among its other purposes, available for the investigation of insects in their relation to diseases of man and as animal parasites. Truly we appear even now almost to have a department of public health, but we seem to be approaching the problem because of our interest in the cow, the sheep, and the pig; in formaldehyde and boric acid; in algae and bacteria; in mosquitoes, flies, and hookworms; and not because of our interest in man and the community in which he lives.

But the figures that have been given should not be misunderstood, for the appropriations to which reference has been made must be drawn upon for many purposes in addition to those that have been mentioned and probably only a small part goes toward the study of public health problems. They have been brought to your notice merely to show the willingness of the national government to provide for the study of problems relating to public health when an occasion for doing so presents itself. On a basis somewhat different from that of the

appropriation for the Department of Agriculture is the appropriation made for the Treasury Department, for the use of the public Health and Marine Hospital Service; but with respect to this as with respect to the former it is difficult to determine just how much of the appropriation, \$1,517,750, is expended with a view to improving public health, since a part is spent for other purposes—in this case, for the treatment of sick seamen. The making of the appropriation is, however, a substantial recognition by the government of its obligation with respect to the public health. The fund for the prevention of epidemics, which by appropriation and reappropriation is maintained at about a half-million dollars, is placed at the command of the President alone, and is a distinct recognition not only of the duty of the national government with respect to public health but also of the possible impotence of State and municipal sanitary authorities inasmuch as the money is appropriated for use in aid of State and local boards, or otherwise, in the President's discretion.

And over against the appropriations for the public health work of the Department of Agriculture and of the Treasury Department, and the appropriation for the prevention of epidemics, and still further in recognition by the government of its obligation with respect to the public health, is to be placed the money, amounting now to about \$55,000 per annum, expended by the Department of Commerce and Labor, through its Bureau of the Census, for the collection of vital statistics. If the money disbursed by the national government for the protection and improvement of the public health is accomplishing anything, the figures collected by the Bureau of the

Census should show it. But they show also the result of the work of all state and municipal agencies laboring toward the same end. They show the results of the social and economic changes that are going on, and of the education of the masses, through our schools, through the public press, and through many other channels. They reflect the advances of medical science. But nowhere is there any one whose duty it is to check the results of all of these factors by the census returns, and to determine the value of each factor, as a guide for future work. Grant, if you will, that in the light of present knowledge no accurate results would be obtained from an attempt thus to decipher our vital statistics; are we, by doing nothing, going to learn how to interpret them? What we most want, and what we most need, is the very knowledge that will enable us to decipher such statistics so that they may have something more than a merely historical interest comparable with that of the cuneiform inscriptions of the Assyrians. The problems of our soil and our live stock, our fields and forests, our birds and fishes, our weather and our constellations, are no more important than are our problems of public health, nor are the former any more likely than the latter to open up before us, and yet with almost universal approbation we spend millions of dollars every year in our efforts to solve them. Why not with equal earnestness undertake now to solve the vast problems that confront us with respect to the health of the nation? The individual is doing all that he can or is likely to do. Some of our cities are engaged in the work. States have entered the field, though none too many of them. But the task is large and the health of the people

is not a local problem. Let the National Government gather together the workers whom it has already thrown out on the skirmish line; organize them, reinforce them. Let us have an army consecrated to the saving of human life as well as one organized for its destruction.

November 22, 1907.

THE DETECTION OF COMMUNICABLE DISEASES IN SCHOOLS AS A PART OF MEDICAL SCHOOL INSPECTION.

BY

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Medical men are very apt to shirk all responsibilities outside of their professional work, which is altogether wrong. Physicians have duties toward the State just as other men. I have always taken for my example as a citizen the late lamented Prof. Virchow, one of the greatest pathologists that ever lived. The most industrious of scientific workers, he yet found time to take very active part in the political life of his country. But he always labored in that department in which his scientific knowledge would make him of most value.

Where, then, can we medical men find ourselves of more use to the commonwealth than in the educational fields, and especially in furthering that great object connected therewith, School Hygiene?

The State's life depends on the evolution of our free public schools. A higher and higher state of education alone is a surety of the perpetuation of the free institutions under which we live. And a higher educational development cannot be thought of without a more and more per-

fect teaching and enforcement of *hygienic* laws. To neglect the hygienic condition of the pupils is to neglect their mental growth and impair their future civic virtues. *Civic virtues!* This word always makes me swerve for a moment from whatever I may be considering and deliver myself of a few words on the most important of all "*obedience to the laws.*" Have you ever thought of the terrible fact, that we are the most unlimited law-breakers in the world? We make no end of laws, and, when they do not suit us, we break them without the slightest hesitation. In my several official capacities, when I considered it my duty to enforce obedience to laws, I've often been met with utmost opposition and been esteemed a personal enemy. Whence arises this moral defect? I am perfectly sure it comes from the lamentable lack of enforcing obedience at home and in the school,—and lawless children make lawless citizens.

Unfortunately many of our people confound liberty with license,—think it *manly* in a *boy* to be uncontrollable and irreverent to his elders,—and liberty loving in a *man*, when he breaks an inconvenient law. Gentlemen! If there be a bad law, enforce it, and by so doing you will also force its repeal; but while it is in force, *keep* it. Pardon this digression!

School Hygiene then is a matter of vast importance, "*Mens sana in corpore sano*" is as true to-day as when it was first uttered. The preservation of health is a mighty factor in building up character.

It seems to me, therefore, much needed that all teachers should be instructed in this weighty science of School Hygiene before they take charge of a class of children. I believe, however, that the curriculum of

normal schools does not include it in its many items. I have for this reason made it known in our district that I will give all our public school teachers a course of instruction in it this Winter. I trust that many of my hearers will take steps at their respective homes to follow my example and thereby impress the school authorities with the weightiness of this matter. We outsiders may look for the children's health in the best possible manner; we may erect perfect palaces of schools; may see that the class rooms, the pupils' seats, etc., are planned according to the most minute demands of School Hygiene, and all this will give little benefit to the little ones if the *teacher* does not pay heed to the *laws* of hygiene, partly from indifference, perhaps more likely from ignorance. I appreciate the fact that the teacher should be competent, that is, have the knowledge to recognize in his school-life all non-hygienic conditions, and to have the desire to see them abrogated in the interest of the children entrusted to his care, which, however, can not be accomplished unless he knows himself means and ways, guaranteeing to his pupils the best possible conditions of perfect health.

I think we are very apt to forget entirely, or perhaps never bear in mind, that it must often be a precarious matter to let the young child begin school life. And why? Because we take it from a life of unbounded freedom to one where he is shut up for hours in oftentimes a stuffy and illy ventilated room, with perhaps too many children for the size of this room, and they perhaps insufficiently clean, and where by the strict rules so suddenly enforced his nervous system may receive rude shocks, as also by probably undesirable companions from wretched homes. The teacher should

be able to recognize these conditions and understand how they may easily depress the young child's state of health and thereby make it more easily receptive of disease germs. Above this, however, the teacher should be able to comprehend the psychological condition of the pupils, and, if so, become what I call an "ideal teacher," i. e., one who treats pupils as *individuals* and *not* as a *class*. There is much to be said about contortions of the spine by sitting in false attitudes, and other cognate matters, but such can not enter into this paper, whose great subject after all is the detection of communicable diseases.

The importance of school inspection by medical men in co-operation with teachers willing to aid in every way can not be too highly estimated, more especially in my opinion in the detection of communicable diseases. It is of such magnitude that in Hungary for example the school physician, appointed by Government, devotes his entire time to the welfare of the school. How far distant are we yet from this advanced position! Therefore, when this opportunity of speaking to you was given to me, I determined at once to call to your mind that by the great power vested in the Health Boards, you can as health officers, with your boards, do a large part of the work, which would naturally belong to medical school inspectors, without reference to the Boards of Education, who are often composed of men slow to appreciate the advances made in hygienic endeavors for the public weal. You are, no doubt, well aware how some people still exist (and not always the most illiterate), who are violently opposed to vaccination. This becomes known especially in connection with the law, which compels school attendance and at the same time forbids children to

attend school unless they have been properly vaccinated. It seems to make no difference in the minds of these opponents when you bring to them endless examples of the blessing vaccination has conferred on communities and nations. Most prominent of all is to me the very great success health reforms have produced in the old German city, Augsburg, formerly often almost decimated by epidemics of typhoid, cholera and small pox, whereas now these have been entirely stamped out.

Very instructive I have found the statement referring to another European city, that tuberculosis in the time from 1876 to 1903 has furnished fewer deaths than ever before. But this does not include those of school age, meaning, of course, the young from 5 to 15 years, within which age limits the decrease of the number of deaths has not kept even with the other age periods; no, it has grown larger, and has outnumbered those from all other illnesses, as for example, diphtheria, whooping cough, measles, dysentery, scarlet fever and typhoid. What does such a fact show? Plainly that the source of infection is not only the home, but also the school, and the afflicted not only the pupils, but also the teachers. Of course, this condition is doubtless of less magnitude in this country than in Europe, and less in country districts than in large cities. It always makes me sad when I see how the poor little ones in the tenement houses of our big city of New York have to live in horribly stuffy, narrow quarters and get fresh air only on the sidewalks. It shows, however, how this terrible disease, tuberculosis, comes as much under medical supervision in schools as the more prominently communicable diseases. It goes without saying, that the school, because it assembles children from

different homes and brings them into close contact, becomes under certain conditions a medium for the spread of infectious and contagious diseases. The recent better knowledge of the specific cause and propagation of such diseases imposes a still greater duty upon school authorities, to exercise every care and precaution, and aid the health authorities in all ways in their endeavors to prevent the school from becoming an agent in the spread of diseases.

I noticed some time ago that in Chicago, I think in 1905, of 75,000 pupils 4,539 were temporarily excluded from school on account of danger of conveying contagion. A very notable decrease in the mortality from infectious diseases especially diphtheria and scarlet fever thus resulted. In this connection, I think it an important thing never to speak to the laity of scarlatina, the scientific name of scarlet fever, but always refer to it as scarlet fever, because I have found that with the majority the name of scarlatina has no significance at all. Unfortunately our school laws allow the employment of a physician only for vaccinating purposes, at least this is all that School Boards attempt to do in the vast majority of schools outside the large cities.

Therefore, a large field is left for the activity of Health Boards. Fortunately the power invested in them, as I mentioned above, is so extensive, so sweeping, that it requires mainly the energetic exercise of this power to supply the necessary medical supervision that School Boards have failed or were not empowered to provide.

But in order to do such work effectively, the Health Board and the teachers should work together, and I will show further on in what way.

It was with delight that I learned in

1897 that the City of New York had appointed 134 physicians to visit the schools, which number later on was increased to 150, and no doubt is still larger at the present time. In 1899, the Board of Education of Chicago appointed 50 medical inspectors. In Boston that has been done since 1894. In Paterson, N. J., it exists since 1900; in Minneapolis since 1901; in Detroit since 1902.

When I was President of the Board of Education and also that of Health in my town, I could supply in a measure the absence of a regularly appointed, all-round school physician by having a resolution passed to empower me to call in the services of a properly qualified physician whenever there arose special need. If a case of any contagious disease occurring in a child was reported, a physician was employed to examine all the children of the class which the sick one had attended. If any of them gave the least suspicious symptoms even they were at once excluded from school, directed to have the family physician called in, and were not admitted to school again until they brought a certificate of perfect health from their medical attendant. By this simple means a number of times the outbreak of an epidemic was prevented.

My idea regarding the plan which would work in any community where a school physician is not regularly appointed, or, if appointed, is not devoting his whole time to the school, I will herewith describe to you.

First of all, every new pupil entering school should be examined and at that time it is of special importance to make all possible inquiries regarding a tuberculous history. In France, in certain schools all pupils must be examined every three months for tuberculosis, and cards are put

up in all the rooms suggesting methods of preventing this terrible disease. All tuberculous pupils and teachers are excluded. Then all vaccination certificates and scars should be examined, and in doubtful cases revaccination demanded. Furthermore to secure the effective co-operation of all intelligent teachers, cards or little leaflets should be furnished to them containing instruction as to the detection of a number of the communicable diseases. If some false alarms are made it matters not for this will be on the safe side for the school. It is better to make a mistake now and then, than to leave a single infected child in the midst of the well ones. On these leaflets will appear the following short description of diseases.

First. Diphtheria. Does the child complain of or has it sore throat with or without a chill? Is it irritable or does it show nervousness by the trembling of the hands when writing, and does it appear somewhat feverish? The teacher finding this, at once reports to the school physician or health officer. If it prove diphtheria, all the rest of the children of the same family are excluded from school and not readmitted without a medical certificate. And this re-admission should not be granted until three weeks after perfect recovery, for the bacillus is often found in the throat several weeks after apparently perfect recovery. If culture tests prove total absence, the child is readmitted but in the mildest cases 10 days ought to be allowed to escape.

Second. Scarlet Fever. It is impossible to see much about it, till vomiting, sore throat and fever have set in. The rash appears later, and in mild cases all the symptoms are not much in evidence. Send the child home to stay there for at least six weeks. All children from the same

house must also be excluded for one month, for they may have the disease in a very mild form, and you know from the mildest case a very severe one may be acquired.

Teachers will bear in mind that this disease occurs mostly in fall and winter and less in summer; also that if a child a week after exposure shows no symptoms of having taken it, it most likely will not do so at all.

Third. Measles. A very contagious disease. It breaks out in from 7 to 21 days after exposure, but I saw once a case that succumbed only after 28 days.

Unlike scarlet fever, the contagion of it is soon dissipated. It is most virulent in spring and least so in autumn. Exclude a child for 4 weeks and also the other children of the same household. As a general thing people do not consider it of enough importance and yet the fact that it predisposes to pulmonary diseases makes it dangerous.

Medical certificates, however, are not needed because its contagion dissipates so soon.

If an epidemic exists, look for children complaining of headache, pain in back, dullness.

It is far more dangerous in infants than in older children.

Fourth. Whooping Cough. Mainly known by the convulsive cough. If an epidemic exists, watch for a very persistent cough even if no whoop accompanies it. Exclude the afflicted for two months. (Many physicians do nothing for this disease, which I consider a grave mistake). I have been very fortunate in limiting the extent and violence of this illness to 3 weeks and less.

Fifth. Mumps. Easily recognized by the seat of the swelling. Exclude for ten

days after disappearance of the swelling.

Sixth. Chicken Pox. Little vesicular eruptions without special disturbance of the system. Exclude for 3 weeks after the appearance of the first symptoms.

Seventh. Contagious Conjunctivitis. The linings of the eyeballs and lids are red. There is a discharge, first watery, then mucous, then yellow and sticky from mucus and pus; eyelids glue together. Excluded till well. After having been sent home, the balustrades, desks, seats, door-knobs and other parts of the doors apt to be touched by children must be washed with an aseptic solution.

Eighth. All skin eruptions must be referred to medical inspection.

Ninth. Chorea. Should be excluded for it will be taken by imitation.

A thermometer should be given each teacher. The teachers provided with these leaflets are directed to notify at once the medical school inspector, if there be such official, or the health officer of the district if no school inspector exists, whose duty it shall then be to make an examination of all the children of the class, in which a contagious disease has been discovered, and to send all, even mere suspects, home for further observation by the family attendant, by whose health certificate alone they can be readmitted.

I think when these diseases break out in a boarding school, the pupils should not be allowed to go home until the attending physician has decided that they can not carry the infection with them.

I have said nothing about typhoid fever because this would go beyond the power of observation of a non-medical person. But it gives me the chance of impressing upon you the importance of your inspection of milk supply, because in milk we find

so often the seeds of illness induced in the consumer. And since it enters so largely in the diet of children of school age, it is proper that in the prevention of typhoid fever especially it should be spoken of. It will astonish you when I tell you that in the German Empire alone more than four hundred and twenty-five million dollars' worth of it is consumed yearly. Its supervision is of vast importance, and I am convinced that this should begin at the stables, and it would be of immense benefit if in each village and city, the sale of all the milk came through some great central establishment, and not through any number of smaller dealers, because one central establishment can be watched and guarded hygienically far better and easier than a number of small sales-places where much neglect can be practiced.

But my distinguished friend, Dr. Darlington, the Health Commissioner of New York, will tell us all about this soon. Gentlemen! All hygienic measures are the therapeutics of preventive medicine,—the great medical goal of the future. And since the future of our great Republic rests with the generations to come, and since it lies in our hands to make them better prepared for their great tasks, let us be up and doing. The intelligent physician par excellence is the true guide in all that concerns the proper development of our children.

And do not forget that amongst them are the untold numbers borne by newly arrived immigrants, often alas! of the most undesirable "offal" of European nations—full of ignorance, steeped in filth, foreign to every hygienic principle, and yet by birthright—citizens of this great country.

Burbank of California was once told that he ought to introduce into the method

of nursing children some of the scientific ideas he was applying every day to the improvements of plants—to which he replied "that is the great object and aim of my life." While plants, weeds and trees were responsive to a few influences in their environment, children were infinitely more so, and the failure to recognize the spiritual elements in the environing condition of them had been the fatal lack in dealing with them. The brain-cells of children who inherit degenerate tendencies, or who are arrested mentally can be developed by a scientific process and the little ones made moral and intellectual members of society.

Then let us all strive to be such guides, preparing all these millions of budding citizens for direct and indirect self-preservation, for parenthood, for citizenship, and the miscellaneous experiences of life.

DIFFICULTY IN URINATING DUE TO TABES.

In the case of old persons who complain of slowly and difficulty of urination and other urinary symptoms pointing to enlargement of the prostate gland, it is necessary to bear in mind the possibility of the trouble being due to tabes. Even though examination shows the prostate to be enlarged, it does not necessarily follow that it is the cause of the urinary disorder, and it is important to determine whether tabes may not be present.

DRUGS SIMULATING SUGAR IN THE URINE.

Coleman states that the following drugs when ingested may cause the urine to reduce Fehling's solution and respond to some other tests for sugar: Acetanilid, arsenous, salicylic and dilute hydrocyanic and sulphuric acids; alcohol, amyl nitrite, chloral, chloroform, copaiba, glycerin, mercury, morphine, strychnine, turpentine. (*The Medical Council.*)

FAULTY METABOLISM AND FAULTY DIAGNOSIS.¹

BY

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The use of general terms to cover groups of obscure conditions has ever been fruitful of error and a bar to progress both in diagnosis and treatment. Knowledge of diseases of the chest under the general title of "Inflammation of the lungs" made little or no advance till the stethoscope began its differentiation. Both surgical and medical diseases of the abdomen were confused under the heading "Inflammation of the bowels" before aseptic surgery taught the way for clearer methods of diagnosis and treatment. As a favorite generality, Malaria, became a joke, but the opportune discovery of the plasmodium gave to it its proper place.

The more advanced studies of metabolism have given to the present generation a new group of broad terms. Such titles as faulty metabolism in general, and auto-intoxication and uric acid in particular, were coined in the laboratory for the classification of studies, but the clinical arm of the profession has grasped them eagerly and applied them indiscriminately in every case of diagnostic stress.

The simplicity in the study of digestion of yesterday is in marked contrast with the elaborate and complex study of metabolism of to-day. We were then taught that a mixed diet of proteid, carbohydrate and fat, passing from mouth to stomach, and from stomach to intestine, mixing with a few special ferments in the trip, was absorbed for assimilation and nourishment.

How this nourishment occurred, what new products were formed, what mistakes were made, and what effect they had on either the physiology or pathology of digestion and nutrition we knew not. Physiological chemists have for years been engaged in the painstaking effort of solving these problems. Hampered by the limitation of experiment in the human subject, often forced to put aside years of work because of faulty methods of analysis, dependent upon test tube deductions or experiments upon animals whose metabolic processes are vastly different from man, it is not surprising that results should come slowly or that the deductions should often be erroneous. While scientists admit with due modesty that they have but scratched the surface of knowledge of the subject, they have been able to show that much of the cherished theoretic deductions is absolutely unfounded; that long neglected scientific dietetics is possible and a most important branch; and that the whole basis of our present method of diagnosis and treatment is likely to be changed by future and thorough studies of metabolism.

The limits of the present paper will not admit of more than a brief outline of the results achieved in *one* of the subdivisions of metabolism. Uric acid probably because it was the first discovered in bladder stones, has, for more than a century, been given an important place in pathology both by the doctor and his patient. Its external manifestations, in gravel and gouty concretions made very easy the transposition of cause and effect, so that medical and laymen alike naturally dropped into the way of believing uric acid to be the cause of many obscure conditions. Of the true origin of uric acid little but hazy theory was recognized until

¹Read before the Hospital Graduates' Club, January 23rd, 1908.

the careful study of the nucleo-proteids and isolation of the purins made possible the feeding experiments which proved the following points:

1. That excreted uric acid comes from two sources—*exogenous* from the purin basis of the nucleo-proteid food and, *endogenous* from the purins of the nucleo-proteid body tissues.

2. That urinary examination, to determine uric acid quantities was obviously useless without accurate knowledge of the purin intake.

3. That uric acid was harmless and when given hypodermatically was excreted practically as it entered the body.

4. That the purin bases, xanthin, hypoxanthin, guanin and adenin believed to be toxic are really innocuous.

5. That nucleo-proteids after reception in the intestine are met by recently discovered converting ferments and absorbed. But what occurs between the absorption and elimination is not known and until mid-protein metabolism gives up its secrets, very little of the true pathology of this subject can be deduced.

The acid theory of gout and rheumatism had its origin in the discovery of uric acid in the blood of rheumatic subjects and in the blood and deposits of the gouty. Balanced against this, however, uric acid has been recovered in equal quantities from the blood of many diseases, where it cannot be attributed as the cause, for example: phthisis, pneumonia, leucaemia, cancer, and nephritis and more accurate modern methods have recognized it, in small quantities, as a constant element of normal blood.

It has not been possible to prove why uric acid, in the form of acid urates, is deposited in gouty subjects, how it really

exists in the circulating blood, nor has any one been able to prove by accurate methods that its presence, even in gout, acidulates or in any degree diminishes the alkalinity of the blood. True, many using the trituration method have shown persistent alkalinity. But later observers have learned that even this method is not accurate for such complex fluids as blood and urine. The very latest observers still recognize that excretion of uric acid is slightly increased during a gouty attack, but believe that even this will fall before more certain experimental methods.

These deductions are recognized by all competent observers who now believe that uric acid is the innocent result rather than the general cause of most of the conditions to which its name has been applied.

In sharp contrast, however, are the views of the English writers who still cling tenaciously to the old theories. This is particularly true of Haig, the most enthusiastic and voluminous writer on the subject. In a recent work, he says in part:

"Uric acid affects not only the blood, but influences, in a similar manner, the function, nutrition and eventually the structure of every organ and tissue in the body, and as regards the infectious diseases, has, in some cases, a more important influence than the microbes themselves. As regards the tissues, it controls the production of energy and production of heat to an extent which acting as it does, from hour to hour throughout life, cannot be but of enormous importance. But recent advances have carried us far beyond this and we can now say with absolute certainty that uric acid controls and conditions the capillary circulation of the whole body and thus regulates the blood pressure, the heart action, the nutrition of the heart and the vessels, the nutrition of the tissues and all the metabolic phenomena which constitute the life of the body to its minutest cell."

While the careful student of advanced work on this subject knows that Haig in common with most English observers used incomplete and inaccurate methods of experiment, the effect of such extravagant statements freely quoted as they are, cannot but be far reaching. To the busy medical man with scant knowledge of accurate feeding experiments, with absolutely no knowledge of organic chemistry, the purely scientific work on the subject is a closed book and, therefore, because he understands them, he naturally turns to such writers as quoted for the interpretation of a subject of which he knows little or nothing himself and naturally applies the deductions which are based upon long exploded methods.

Another phase of the subject is worthy of mention. It is well known that most of the experiments for proving the worth of various drugs popular in so-called uric acid conditions were made prior to the use of accurate feeding methods in determining uric acid quantities. This fact while it gives little scientific weight to the results does not deter the manufacturing chemist from exploiting his wares and giving these results as proof of their value. The literature accompanying each vaunted uric acid solvent is cunningly worded in semi-scientific style to catch the eye of the medical man but not so abstruse as to escape the perusal of the studious layman. Such literature is harmful in the extreme, giving perverted ideas of the doctor, it fills the patient with notions that are extremely difficult to controvert.

While uric acid is taken as an example largely because of the hold it has upon the lay mind, what has been said applies to a

greater or lesser extent to all the subdivisions of metabolism.

We have then, on the one hand, the physiologist working diligently to solve the problems of metabolism but with method so complex as to be beyond the reach of the every day practitioner. On the other hand, we have writers using the laboratory terms without applying the principles, who build up theories with a false premise for a foundation, thus perpetuating obsolete and useless deductions.

Because of this conflict of purpose and ideas, advancement in diagnosis and treatment naturally suffers, for we have on every side the general terms faulty metabolism, auto-intoxication and uric acid used with practically no regard for their true application, with no attempt to reach conclusions by proper methods of research and often to the neglect of careful physical examinations and known methods of diagnosis.

The following brief histories may serve to illustrate these points:

Mrs. O., 50 years old, married, mother of three children, was forced because of servant trouble to be upon her feet for a period of two months. She began to suffer with extreme pain in the inner aspect of both legs near the knee. The pain became so severe that she called her physician, who with scant examination made a diagnosis of uric acid as the cause of the pain. For a year and a half all the favorite pharmacopoeal and proprietary remedies and strictest diet failed to relieve the patient and she was finally sent to Nauheim where the diagnosis was confirmed but the "cure" failed to realize. The patient limped from Nauheim to Weisbaden, there the diagnosis was the same, as was the result. It required two men to assist the patient to the steamer for her return trip. On her arrival here she was barely able to walk at all. When I saw her, the diagnosis of flat feet

and varicose veins was so simple that I could hardly believe the foregoing history. Proper orthopaedic treatment immediately relieved the symptoms.

Mrs. B., nursery maid by occupation, was seized in the middle of the night while moving around the room in care of her charge, with a severe pain in the great toe. On seeing the swelling and redness she called her doctor who without touching the toe pronounced the swelling as gout. The patient was told she was loaded with uric acid. The treatment salicylic acid, colchicum and milk diet was followed faithfully for two weeks without result. I was then asked to see the case by my patient, the father of the baby. No other doctor was mentioned. I found an ununited fracture of the long phalanx of the great toe. Proper splints immediately relieved the symptoms.

Mr. C., married, 35 years old, was taken sick with slight fever and severe pains in lower extremities. Without physical examination, diagnosis of malaria was made, but as the exhibition of quinine did not alter symptoms, the diagnosis was revised and uric acid poisoning was given as the cause. salicylic acid and small doses of iodide were given. The fever began to subside, but other symptoms developed, a progressive alopecia being the most marked. After six months, he was sent to me. Physical examination revealed the following: Extensive alopecia, no eye lashes and no eye brows, a perforating ulcer in the soft palate. Mucous patches, general adenopathy and a fast fading but still discernible roseola. There was no history nor sign of chancre. Prompt and vigorous anti-syphilitic treatment resulted in prompt relief.

Mrs. T., 48 years old, weighing 250 pounds, being very much worried because of the amount of adipose consulted a specialist in metabolism. He told her she was suffering from faulty metabolism of fat and without physical examination prescribed a reduction treatment. After three weeks, both doctor and patient were delighted to note a steady loss of weight; at the end of two months it was twenty-five pounds, and at the end of four months, 50 pounds. A steadily increasing painful constipation now developed and the loss of weight continued. After the sixth month I was consulted. Ex-

amination of the rectum revealed a far advanced inoperable carcinoma.

The studies of metabolism give promise of great rewards in the future, but until the work has been reduced to a more practical basis, it would seem that exactness in diagnosis and skill in treatment would be more conserved by a careful attention to our known methods and less readiness to attribute obscurities to metabolism and its faults.

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TREATMENT OF GASTRIC ULCER.

BY

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In treating patients suffering from ulcer of the stomach we may divide them into two classes, viz., those who are able to take the "rest cure" which gives much better results, and is far preferable; and those who, on account of business, are unable to spare the time and have to take what may be called the "ambulatory" treatment.

REST CURE.

In the rest cure the patient is kept absolutely quiet in bed, not even being allowed up to defecate or micturate. All excreta, of course, are passed into a bed pan, the patient lying flat on his back and remaining so for a week after all symptoms have disappeared, and then gradually allowed for three days longer to sit up in bed, after which he may be up and about.

Those patients who are suffering greatly from pain or have, or have had, a recent hemorrhage require a more stringent and prolonged treatment than those who are not so seriously ill.

No food must be given by mouth and nutrient enemata must be employed exclusively for several days until the ulcer symptoms are much lessened or have entirely disappeared. Three lukewarm enemata are given daily for about three days, except in relapsing or otherwise refractory cases, where they are employed for from ten to twenty-one days. I have known cases in which they were continued for twenty-three days without any permanent bad results. Then a little food may be given by mouth.

The nutrient enema must always be preceded by a cleansing enema through a short tube. The nutrient enema should be given through a long rectal tube, with side openings and velvet eyes. The patient's hips are elevated and the mixture allowed to run slowly into the rectum, the patient remaining in the same position for a half to one hour. After the tube is withdrawn a towel should be held against the anus for twenty minutes if there is any tendency for the solution to be discharged.

These enemata may be made up according to the following formulae:

a. Peptonized milk 5 oz.; yolk of one egg; claret one tablespoonful; certain prepared cereal foods, one tablespoonful; and a pinch of salt. To be used on account of the wine, especially in cases of great weakness.

b. Milk, 4 oz.; water, 1 oz.; 2 eggs; a pinch of salt. The milk and eggs in this formula should be peptonized.

c. Some standard preparation of peptones, 1 oz.; water or peptonized milk, 5 oz.; a pinch of salt. Also good in cases of weakness, on account of alcohol in the peptones.

If the bowel is irritable 3-10 drops of the

tincture of opium should be added to each enema.

If the thirst is very tormenting, small pieces of ice may be allowed to melt in the mouth or the mouth may be washed out frequently with cold water.

After this treatment has been followed out we may proceed to put patients upon a suitable diet by mouth which should be very digestible, liquid, and uniform at first, and later more solid and mixed.

The *First Dietary* should be as mild and unirritating as possible, and the peculiarities of each patient will have to be studied. As a basis of this diet Leube's Diet List may be used, giving the first dietary for about ten days, the second for seven days, and the third for the balance of the treatment. The severity of the symptoms in each individual case will determine at what period of the treatment one dietary should be substituted for another. Milk is the best and most appropriate diet, as it is a liquid, very nourishing and unirritating. If the casein coagulates in large lumps, raw milk must be stopped and boiled milk tried. Boiled milk leaves the stomach much more rapidly than unboiled milk and the casein coagulates in much smaller quantities. If the milk is well borne two quarts may be given daily, but only in divided doses so that small quantities are given at each meal. At first a tablespoonful may be given every half hour, which may later on be increased to a glassful every two hours.

Unfortunately some patients can not take milk in any form, not even if mixed with other substances or if correctives are added. It is a bad practice, however, to refrain from administering milk even if the patient claims that it does not agree with him. The attempt should always be made to give it to

him in small quantities, even in teaspoonful doses; or certain substances like bicarbonate of soda, vichy, or lime water may be added. I have had the best results with the latter in the proportion of one to two tablespoonfuls to the half glass of milk. Boas adds a small amount of tea and Hayes recommends milk of magnesia.

Unfortunately the patient cannot be kept solely on milk for a long period of time because the demands of the body for food cannot be entirely satisfied by milk alone. The administration of an exclusive milk diet is essentially a hunger cure and causes the patient to lose considerable tissue.

Therefore in a few days we increase, and greatly too, the nutritive value of milk by the gradual addition of milk powder, or of one or several drams of condensed milk.

Ewald here advises the administration of flour soup boiled with milk. The advantage of this dish is that the casein coagulates in smaller flakes than in pure milk and that it possesses greater nutritive value.

In the majority of cases particularly later in the treatment, finely divided amylaceous food like tapioca, rice, maize flour, barley, etc., may be added to the milk.

In place of milk buttermilk may be given; the latter contains very much less fat and sugar than ordinary milk and is frequently relished by people who cannot take pure milk. Cream in small quantities* is also often well borne.

Debove advises pouring milk into the stomach through a soft stomach tube, thus feeding those who cannot take milk even in small quantities, and finds that they are able to digest it this way all right. He increases the nutritive value by adding to the milk, condensed milk, or buttermilk, evaporated to one-half its value. I consider this rather

dangerous unless the tube be only introduced to the cardia.

Raw, beaten up white of egg or white of egg in water may also now be allowed. White of egg, like the casein of milk, seems to possess the power of combining acids and even of neutralizing them, and is therefore: an ant-acid. Albumen or yolk of eggs in emulsion may also be allowed.

If milk cannot be borne in any form or if it agrees only when taken in small quantities, meat solution, preferably with an egg beaten up in it, or meat jelly, may here be given.

The latter article of diet hardly irritates the surface of the ulcer at all. It is prepared by cutting up a fowl (including the bone) into small pieces, adding a pint of cold water to the pound, and boiling down very slowly to such a consistency that when cold it will gelatinize, which will be to about half the original quantity. This should take about three hours. If it boils down to too small a quantity, add more hot water while cooking. When cold all the grease, which will have settled on top, should be taken off. Beef or mutton and cracked bone may be substituted for the chicken. Calf's foot may be added as it will give more consistency. Or beef tea or a good meat solution or meat extract may be given.

Sugar solution is very well borne, the secretion of acid being smaller after its ingestion than after a test breakfast or after the introduction of carbo-hydrates in the form of undissolved starches. It therefore seems an appropriate article of diet, especially in those cases of ulcer associated with hyperchlorhydria; but it is contra-indicated in all cases where there is a tendency to fermentation.

Sixty grams of sugar may be given in

20% solution per diem. Milk sugar is the least suitable one of the different varieties of sugar because it possesses laxative properties. However, in some cases it may be indicated. The best of all sugars is C. P. dextrose, but unfortunately that is quite expensive. The commercial form is good enough ordinarily.

An ice bag is applied over the stomach for three to seven days after hemorrhage has occurred or is impending. After that, or in the beginning of treatment if no hemorrhage has occurred, a warm Priessnitz compress is applied or hot poultices (so hot that the skin appears slightly scalded), or felt sponges or spongiopilin dipped in hot water and covered with oil silk and flannel bandage and renewed every three or four hours during the day time and in the beginning even at night time. A hot water bag may be used if the patient objects too strenuously to the foregoing.

The longer the patient can adhere to a strict diet the better. Generally the pain and all the other symptoms disappear by the tenth day at least, but the patient is not allowed out of bed for two weeks at any rate, and not even then if the pain or the epigastric tenderness or the cardialgias persist. Gradually allow him to sit up in bed a little longer each day, then to rest in a Morris chair and then to walk a little around the room. The cure usually takes from four to six weeks if there are no complications.

After the patient has been on the foregoing diet for about ten days the *Second Dietary* may be begun. Here we still continue the small and frequent meals, and in addition we may order softened cakes, biscuits, or Zwieback, dipped rolls, tapioca or rice boiled thoroughly, leguminous soups,

boiled calves' brains, boiled calves' thymus, boiled young chickens, boiled pigeon, gruels as oatmeal and milk mush, beef (finely scraped with a spoon from the inside of a piece of round steak, cut at least two inches thick and broiled *very* rare), with a little salt added, boiled calves' feet, boiled perch, bluefish, or trout, oysters or clams (the hard part not being swallowed).

In another week the *Third Dietary* may probably be allowed. This consists in the addition of scraped or half raw broiled beefsteak, scraped raw ham, mashed potatoes and carrots, dry Zwieback.

The *Fourth Dietary* is given as late as possible, and consists in the addition of broiled chicken, pigeon, fresh venison, prairie chicken, rare roast beef, fillet of beef without any made sauce, hind quarter of veal, quail, pike, shad, soufflés, stewed apples and pears, prunes in the purée form, vegetables that can be prepared in purée form as spinach, green peas, turnips, lentils and beans. All meats must at first be tender and rare, later the varieties with tougher fibres may be gradually administered. Hard boiled eggs will probably cause distress, but if finely mashed are usually well borne.

Even after all symptoms have disappeared and we are justified in believing that a cure has occurred, the diet should be carefully supervised for a long time and everything that is liable to over-irritate the stomach mechanically or otherwise should be strictly avoided for months, even years; viz.: leguminous vegetables like peas and beans (unless in purée form), black bread, crusts of bread, skin, tendons, fruit pits, seeds of berries, all kinds of strongly acid and spiced food and drink, greasy food, all very hot and very cold beverages, coffee, raw fruits,

ices, alcohol, etc. Weak tea may be occasionally allowed.

By proper prophylaxis in this way we can prevent the return of the ulcer. If, however, there should be any signs of a return of the symptoms, the patient should at once be put on as bland and unirritating a diet as possible, like milk, and then more gradually again built up. If the symptoms do not disappear very shortly, start right in again with the rest cure.

With the Lenhart method of feeding I have not had as good results as with the foregoing, although I have tried it in only three cases. I cannot reconcile myself to giving food by mouth to a patient who, only the day before had a hemorrhage. However, some physicians report very favorably on it.

MEDICINAL TREATMENT.

Both the silver nitrate and the bismuth salts are used very extensively in this affection. The plan as outlined by Nisbet I think a most excellent one. He gives nitrate of silver in $\frac{1}{4}$ grain doses in a tablespoonful of water every morning when patient awakes, a half hour before anything else is ingested. This is given for the first ten days and has the advantage that it is more or less equally distributed over the entire gastric mucosa, i. e., it is not liable to affect any one spot disadvantageously as a pill might easily do. After that bismuth in dram doses suspended in $\frac{1}{2}$ glass of water is given just before going to sleep, and this may be continued for weeks if necessary. If there is constipation give the subcarbonate as that inhibits the intestinal action less than the subnitrate. A large dose seems to be less binding than a small one.

In cases complicated with hyperchlorhydria, as most of them are, an alkali should be given if it has not been combined with the milk, such as bicarbonate of soda, bismuth subcarbonate, and calcined magnesia, 5 grains each every three or four hours.

If bowels are relaxed prepared chalk may be substituted for the magnesia in the above powder. A tablet triturate of 1-50 to 1-25 of a grain of extract of belladonna three times daily just before the principal meals often increases the comfort of the patient and helps in the cure.

After the silver nitrate has been discontinued, Carlsbad Sprudel Salt should be given on arising; dissolving one or two teaspoonfuls in a glass of warm water,—to be sipped for half an hour if possible, and nothing else ingested for another half hour. Regulate the dose by its action on the bowels. It seems to agree best in those cases complicated by hyperchlorhydria, constipation, or where milk is not very well borne.

If necessary the bowels may be moved at any stage of the treatment by an irrigation of warm water or, if that is not sufficient, a lukewarm soap suds enema.

For anemia iron should be given preferably in a liquid form as the tincture of chloride of iron, 10 to 15 drops in egg albumen water taken through a glass tube three times daily; or one of the many preparations now on the market may be prescribed; or an iron mineral water.

If there is hemorrhage absolute quiet must be insisted upon and a hypodermic injection of morphine sulphate grain $\frac{1}{4}$ and atropine sulphate grain 1-150 and ergotin sulphate by mouth, and if necessary one grain should be given at once together with thirty drops of 1-1000 adrenalin chloride well diluted, or five grains of iron sub-

sulphate by mouth, and if necessary one pint of warm normal saline solution by hypodermoclysis, or by enteroclysis, or by intravenous injection and nutrient enemata after twenty-four hours. Wagner and others have employed gelatine both hypodermically and by mouth with good results, likewise calcium chloride.

Fleiner's method is unquestionably of value in suitable cases, and is employed as follows: the gastric tube is passed into the patient's stomach and lavage is practiced until the wash water returns clear, after which $2\frac{1}{2}$ to 5 drams of bismuth subnitrate in a glassful of luke warm water is allowed to flow into the stomach. The tube is then compressed and the patient occupies a position favoring the deposit of bismuth on the ulcer. After five or ten minutes the tube is withdrawn, the water having been just previously syphoned out, and a protective coating of bismuth is thereby left on the ulcer. The bismuth is thus administered first every day, and then every second or third day, until the disappearance of the symptoms.

Van Valzah and Nisbet think it wiser to omit the use of the tube and to administer one glass of Carlsbad water to cleanse the stomach and then one hour later to give two drachms of bismuth in a half glass of water.

Riegel advises the administration of bismuth in all cases of ulcer. He gives 150 grains suspended in water, having the patient drink this sometime during the forenoon.

An operation is advisable if after suitable treatment repeated hemorrhages occur, care being taken that the bleeding is not caused by passive congestion due to hepatic cirrhosis or thrombosis of the portal veins, or if cancer should become engrafted upon

the ulcer, or if perforation, perigastritis, cicatricial obstruction, pylorospasm, or subphrenic abscess ensue. If after a reasonable length of time on the above line of treatment the severe pain and vomiting persist, when a gastro-enterostomy may be performed.

The Ambulatory Treatment differs from the rest cure only in that the patient is up and about and that the compresses are not used, or if used, they are only employed at night. The same medicinal and dietetic treatment, without the nutrient enema, is employed; the patient, if necessary, carrying his liquid diet around with him in a Thermos bottle.

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PHYSICIAN AND PHARMACIST.

BY

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For some years I have been a retail druggist and I have much sympathy for the men of that vocation who have been gradually forced, by commercial competition and loss of professional support, to degenerate into keepers of bazaars.

Some who peruse this paper may think a man, a graduate of both schools, who would criticise one of them, had made a failure by reason of being too versatile; "a jack of all trades is master of none."

For the information of such I would say that I passed both examining boards as well as both branches in the U. S. Army, serving as pharmacist for a year and afterwards nearly four years as a surgeon.

However examinations do not count in these observations; it is practical experience gained by close observation while in the retail drug trade and as a practitioner in Boston, New York and San Francisco,

where I noted the conditions in many of the best stores and through contact with physicians, some of whom prescribed and some of whom dispensed.

At the present time I own and manage a store and find the practice of medicine and the dispensing of drugs both interesting and profitable.

As a subscriber to the leading medical and pharmaceutical journals, I can but note the increasing cloud rising between doctors and druggists. One can not take up a drug journal but that editorials and communications appear galore, calling the attention of pharmacists to the fact that pharmacy is a *profession*; that it is being ignored by that other profession called the medical; that laws should and must be enacted requiring "pharmacy for pharmacists"; that those laws should prohibit doctors from dispensing, and that especially should the doctor be enjoined from signing the death certificate in the case of the demise of his patient.

Why this espionage from a class of tradesmen directed against a profession dating its birth centuries before an apothecary was ever born?

The doctors' skirts are not clear and much that the druggists say is to the point and does not tend to raise the profession in the eyes of the public. Yet it is my honest opinion that the time has arrived for the complete separation of the practice of medicine from the modern drug bazaar for many and obvious reasons, one of which may be, as the druggists cry, "the selfish benefit of the dispensing doctor."

In the first place: has the doctor the moral right to dispense? It is only in recent years that the apothecary has risen to the eminence of a "professional" man. How did he ascend to this exalted position

from the lowly one where he worked for the physician, washing his phials and grinding his drugs?

Go back to 1765 and we find that Dr. John Morgan of Philadelphia, was the first in the United States to write orders for medicine and trust them to an apothecary to dispense to the patient. It made a great furor at the time and marked Dr. Morgan as a very daring man, which in the minds of his confreres seemed to spell dangerous as well.

Since then the druggist has advanced like the camel of fable until now he thinks he should have a good share of the high seat built and filled by men who have given a lifetime to its uplifting and with no thought of earthly reward.

Some day the doctor, if not on his guard, will awake to the fact that while he has been busy with the sick, his neighbor the druggist has pushed a law through, preventing him from treating his patients as he sees fit.

It may be that one of these patients who has kept the doctor sleeplessly alert for days and nights, has passed beyond the help of drugs or unselfish devotion; then will some druggist member of the American Medical Association enter to sign the death certificate while the humble attendant effaces himself to rack his brain for explanations to show the reviewing authority that he has administered no incompatibles.

I do not think it is the opinion of the public that physicians are incompetent to dispense any or all of the medicine they wish to use in the treatment of disease.

Very true it is as druggists forever quote, a physician may be incompetent. There are state boards to guard the public from incompetent doctors as well as incompetent druggists. It is true that those men in

practice at the passage of such laws are registered without examination, both as regards the practice of medicine and the practice of pharmacy, but I have not heard as yet of any state, after having a medical law for years, that has suddenly let down the bars and allowed men of a few years acquaintance with doctors to enjoy "an open season" during which they could register without examination. This is now happening as regards pharmacists in the state of Minnesota, and I am wondering if, in the dim future, some of these "Registered Pharmacists" will not be praying for some check on the careless physician.

Aside from the faults of both druggists and doctors the one great wedge to split them apart is simplicity in drug administration. Polypharmacy and shot-gun prescriptions are going into the same grave of substitution and blood-letting. Crude and uncertain drugs and shot-gun prescriptions have no place in the armamentarium of the skilled physician. His doctrine should be: The smallest effective dose of the purest, potent principle of a certain drug capable of producing the desired effect, given with his own hands while he watches its action against the morbid process he desires it to correct.

His associate is the trained nurse who has fitted herself to *obey*, carry out his instructions in the administration of his potent remedies during his absence and report their effects. All will be well if she, poor girl, does not, by contact with superior minds assimilate so much wisdom that she in turn will seek legislation to place her astraddle the seat so reluctantly relinquished by the druggist.

We have agreed then that the physician has every right to treat his patient as his judgment directs, with no interference

from anyone. His acts are his own, as his patients who give him their confidence would wish, and if there is need of other assistance, it is that physician who will be the first to ask that another be called.

How shall we excuse the druggist from counter prescribing, carried to the extent of medical treatment? It is clear the doctors have selfish reasons for wishing to stop the practice but not so much due to the invasion of their own fields as most people surmise. The dollars taken from them this way are more than repaid by the unskillfully treated patient who rebounds back to them sure of a longer treatment than had he come to them in the first place.

It is my experience that with few exceptions, *all* druggists, and with their sanction their clerks, will prescribe whenever the opportunity offers. Much of this prescribing in itself hurts no doctor and is a boon to the public and I do not see clearly how to establish the dividing line as to what cases the druggist may treat and what he may not. I believe the matter will adjust itself as time goes on and as the public becomes better educated *it* will be the judge whether it will go to the druggist or the doctor for a certain remedy. I would not favor legislation prohibiting the druggist from using his knowledge of materia medica and therapeutics to relieve the pain of a burn, stop a hemorrhage or extract a splinter but I would have the public cognizant of his qualifications and know what to expect as well as to realize he is not capable of treating specific urethritis or to practice optometry.

Let us consider some of the reasons why the druggist speaks disrespectfully of his local physicians:

There *are* incompetent and criminally careless medical men. Tarry awhile be-

hind the prescription counter of any large pharmacy and note the prescriptions as they come in. Some are in doses sufficient to kill; more are incompatible either from a pharmaceutical or therapeutical standpoint, or both. Many are written so that no one but a druggist or a savant of Egyptian hieroglyphics could decipher their meaning. If any mistake is made or damage done the law holds the doctor blameless and condemns the druggist. Little wonder in such cases, the dispenser thinks he should be a check on the prescriber. However I will say right here, some of the highest authorities in medicine and surgery are the most careless in the writing of their prescriptions. At the bedside or the operating table these men save lives when the error of a hair's breadth would spell disaster; they often administer powerful drugs from their pocket cases with their own hands with the same care, so the great objection to their dispensing by reason of any ignorance, does not hold good. I consider it a great point in favor of the physician dispensing his own medicines that he can carry a sufficient assortment of potent drugs which he has close at hand with no possibility of a poor preparation, either from age or faulty compounding, and he is stimulated to more interest and watchfulness toward his patient as he watches the effect of the agents he has so carefully dealt out.

Those remedies that are necessary to any practitioner, in city or country, can be kept by him in his office or home without the confusion and clutter that most pharmacists believe.

I can forgive the physician who prescribes through *some* pharmacists for there are lots of them who won't refill, substitute nor counter prescribe and are justly indignant at the physician who so far forgets

his manhood as to hint at a "rake off" on the prescriptions he sends in.

We are at a period where the druggist is struggling for an existence. His field is invaded by the hydra-headed department store and mail-order house. The patent medicine traffic is doomed by reason of publicity given to a class of unreliable remedies through the drastic pure food laws; therefore that great portion of revenue is rapidly disappearing.

There are too many victims to the glamour of the mortar and pestle, with the result there are too many stores. Even in country cities of 8,000 population near here, there are six drug stores where the trade demands no more than half that number, or less, and the result is the stores are ice cream parlors, cigar stands, dope depots and saloons, and the clerks "g. u." specialists and purveyors in general to His Majesty the Almighty Dollar, until a stranger who cannot find what he wants in more convenient places, hies himself to the nearest pharmacy with joy on his face, knowing that his extra energy will there meet with its reward; but if by any mischance he is in sore need of the filling of a recipe, he must needs inquire after entering, where that department of the establishment is located. However there are advantages, for often there too we find the postoffice, telephone station and laundry agency.

There is a general crusade all over the United States against Sunday traffic, cocaine and liquor selling which is directed mostly against druggists, not because all of them are guilty but because most of them are. Yet druggists are emphasizing and bringing into prominence the misdeeds of doctors and seeking to regulate the treatment of their patients.

The chief resistance to that modern neces-

sity, the parcels post, comes from the drug trade, it thinking there will be an increase of competition from the mail-order house. It is probable such would be the case to a limited extent but there is no reason why the mail-order concern can quote lower prices than the druggists; it only does so because it passes out an inferior article, and a law is now in force that can regulate that sort of competition that thrives by misrepresentation. Only a few weeks ago one of the big pirates in Chicago was prosecuted and a judgment against it maintained. The parcels post must come; it is only a matter of time.

As a country ascends in civilization the laws are framed for the benefit of the people as a whole and not as individuals or classes, and although the process of reconstruction may be painful to these latter for a season, they will adjust themselves to the new conditions and in the end are benefitted. The pure food laws have been the cause of great loss and worry to many industrious individuals but those laws are for the common good and many of the sufferers are now foremost in their enforcement.

There is little need to go into detail concerning the objection of the druggist against the dispensing doctor "because he wants the earth." We all realize each of us wants what he can get and if a druggist wants to push the sale of a preparation under his own name, which gives him a legitimate profit with many subsequent sales to those who have been pleased with the preparation, he has the best right in the world to do so.

So too, has the doctor the right to use his own preparation or any other formula that he has found by long years of experience to fit a certain patient's malady. That patient may think his neigh-

bor has a like ailment and as he cannot go to the drug store for a refill for his friend, he recommends him to go to the doctor who finds that a totally different medicine is needed and who dispenses it, to the lasting benefit of the neighbor and himself. One other minor point is that there is no discussion as to whom the prescription belongs.

I notice there has been great agility displayed lately by the Boards of Pharmacy of two states, directed toward sundry registered pharmacists who have been renting out their certificates to druggists "under par" that the latter might conduct stores, fill prescriptions and possibly "check" the ignorant physicians of those localities. One of the states has, I am told, as "stiff" a Board of Medical Examiners as any state in the Union. I still wonder if it has to chase up any of the registered physicians who are so "ignorant" that from lack of patients they seek an income by renting their certificates?

I refer to the state of Ohio.

The absence of business acumen of the average medical man is phenomenal anyway; next to ministers he gets more quack circulars and mining schemes than any other brand of easy marks. He trains his clientele to pay all other bills before his; he will often drive to treat a patient for less than the livery stable charges for a team to go the same distance, he in most cases tries to be a close friend in the sacred family circle of afflicted, forgetting that "familiarity breeds contempt" and that the grateful patient of to-day calls another doctor tomorrow and that the other doctor and the trained nurse absorb the long deferred payment.

One reason why the druggist looks askance at the deep learning of some of his

local prescribers is due to the free and easy way in which secret preparations are prescribed. It is lamentable how the big men of the profession boost these secret preparations at the same time boosting the good money of the community into the pockets of the promoters. I can remember a few years ago when a certain pain tablet was born. The mail of physicians was filled with samples, pretty calendars, paper cutters and foot rules. These tablets were made for doctors only, and backed with the reports of medical college professors setting forth in detail the indications for which they were especially indicated. Of course the doctors appreciated the foot rules and not having to bother their busy minds with the ingredients of these ideal pain relieving and fever reducing tablets, wrote many prescriptions for them, forcing the druggist to lay in a supply. In a short time patients noticed the artistic monogram beautifying each tablet and the results after taking were so pleasing that their friends were urged to try them when in need of a panacea; result, the druggist ordered many more ounces at \$1 per, for neither he nor the patient thought it needful to consult the prescriber who might change the monogram.

As the years went by doctors' prescriptions began to wane but bless you, the use of the tablets didn't. All at once the pure food law comes to the fore; it requires that all medicines containing acetanilid be labelled showing the amount contained therein which proves a god-send to this manufacturer, who changes his formula to the extent of substituting for the acetanilid another coal-tar derivative of the same class but of a name unfamiliar to the public. Now he proudly advertises his tablet to

be free from acetanilid, cocain or morphine, and the sales are on the jump.

Poor, easy doctor; in order to be a supporter of "ethical" preparations and not to be guilty of unprofessional conduct by mixing up business and therapeutics, he has made himself the etiological factor in an unknown number of heart diseases, lost patients, lost esteem of druggists and put dollars in the pockets of the millionaire manufacturer.

The druggist congratulates himself over the few dollars he has gained by disposing of these tablets in dozen lots. He has known the formula from the first and mayhap has been tempted in some cases to substitute his own tablet of identical composition costing him ten cents in place of one dollar, but he could not supply the magical monogram so he took great risks of losing his customer and having the ethical doctor learnedly expound on the heinous crime of substituting for filthy gain.

Is it any reason physicians are losing caste with the public? Their mania for operative surgery with the senseless fees, their methods of hospital work to inflate private practice, the strutting professors hitched to graft medical schools, who have long since forgotten how to rightly treat a case of whooping cough, all tend to oppose medical progress and make converts to therapeutic nihilism.

I have nothing to say of that physician who, behind the scenes, is a stockholder and was perhaps the secret instigator, simply because I cannot find words in four languages to fit his case. The counter prescribing, dope selling, substituting druggist is an angel in comparison.

Let the axe fall where it belongs; on whatever neck gets under it, without regard to degrees or titles.

I am optimistic regarding the future of the healing art. We are in a period of reconstruction brought about by public education and in such times of strenuousness, chaos may reign for a season, but the knell of trusts, diseased politics, secret pharmacy and quackery is sounding; the better order of things is on its way. Pharmacy for pharmacists, bartending for saloonists, quackery for specialists will gravitate to the level of public tolerance or intolerance. What there is a demand for will exist. Legislation stands for little as it can be evaded, but public opinion hangs a man or sets him free. Physicians and surgeons, well grounded in the art of diagnosis and in the use of their time tried remedies, will rest secure in the just income of a legitimate practice and enjoy the respect of the public and of each other.

DRUG ACTION.

BY

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We have studied the action of drugs for many years. We are still studying it, and each year it grows more absorbingly interesting to us; and yet, we are painfully conscious of the fact that the more we study, the less we know.

That is, the less we know of which we are positively certain. Things which seem as a matter of course to be of use, unfortunately turn out to be altogether different. The difficulty lies in the wonderful complexity of the physiology of man. The interrelations in that complex mechanism are such that the simplest and plainest proposition based on our knowledge of drugs, as obtained from experimental data, may be

totally impractical when put to the test of actual trial. And after all the supreme test is the clinical application.

Two years ago the writer commenced to especially study the question of the properties of atropine as a hemostatic. Physiologic experiment has taught us that atropine increases vascular tension and dilates the capillaries; consequently nothing seems clearer than that atropine must increase hemorrhage, either arterial, venous or capillary.

Three times the writer has advertised widely to the medical profession for reports on the subject, earnestly desiring his colleagues not to limit their reports to favorable cases, but to send him all, failures and successes, in order that a correct estimate of the action of this drug in regard to hemorrhages might be made. The result has been, a large number of reports received from the field; and with scarcely an exception, if any, these reports have shown atropine to be a very effective hemostatic, both in arterial and venous, and also in capillary hemorrhages.

The uniformity of these reports precludes the possibility of error. One man may occasionally administer a remedy and, ascribing to it results which had nothing whatever to do with the remedy, give it a false position. But is it possible that men all over the country can use a remedy like atropine, as a hemostatic for years, and find it invariably successful, if it were not really effective? If, as would seem likely from the study of it physiologically, atropine increased hemorrhages, it could hardly be possible that everybody who made a trial of it would pronounce it a hemostatic.

Here is another one: Gelseminine is a pure sedative. Recently the writer has had

under his care a patient who presented as a marked feature, if not as the most marked feature, profound depression. This depression was not only subjective but objective in its manifestations. Expressions were made indicating a sense of profound debility, such as to induce him to seek a couch, the muscles ached, the feet felt like lead, and mental depression attended the physical debility. The pulse was soft and flabby, lacking tension, and the patient craved something to stimulate him. In this instance, the depression was due to an influenza under which the patient was then coming.

In this and other like cases the digestive apparatus was carefully scutinized, and put in as complete order as possible, since we have learned to look upon disorder of the digestive organs as a most frequent cause of genuine depression. In the group of cases to which the writer is referring this depression continued after the alimentary troubles had been remedied. In these cases gelseminine was administered in doses of 1-250 to 1-50 of a grain, and in every instance the sense of depression vanished, and was replaced by a sense of comfort only comparable to that afforded by a full dose of morphine. Not only this, but the pulse became fuller and stronger, with complete relief of the circulatory subjective sensations.

Explain this who will. We all know perfectly well that the subjective sensation of depression is not always a true one, and that in many instances it is really neurotic hyperesthesia or erethitic unrest; or the patient seems depressed perhaps because he labors under the toxemia due to absorption of toxic matters from the alimentary canal. In these

cases abstinence from food, with the use of cathartics, results in an improvement which cannot be produced by the administration of tonics or stimulants of any description.

But this is not the case in the instances we are considering. Why, then, should the administration of a vascular relaxant and cardiac sedative like gelseminine remove not only the sense of depression but the circulatory debility attending it?

It is evident that neither the physiologic chemist nor the therapeutic experimenter can help us here. This is strictly a clinical observation, where the results of the administration of the remedy are diametrically opposite to those which we would have expected, from the information given to us by these gentlemen.

It is the clinical observer against the laboratory experimenter; and this serves to emphasize the lesson that we have so frequently urged, that the clinician is the court of last resort; and that bedside observations must, after all, prove or disprove, confirm, modify or contradict, the conclusions which have been arrived at by laboratory experiments.

The Pain of Sigmoiditis.—For the *pain* of an acute exacerbation of chronic sigmoiditis, opium, or any of its derivatives, for well-known reasons, should never be prescribed. Usually the evacuation of the bowels is promptly followed by the subsidence of the more intense pains. Hot applications and counterirritants may be applied to the abdomen, the buttocks and the thighs. In case the painful sensations continue, suppositories containing belladonna, the extract of powdered leaves, should be inserted into the rectum as high up as possible. If tenesmus is present, it is advisable to add lupulin in gram doses to the suppository which should have for its base a glycono-gelatinous mass.—*Stern*.

ETIOLOGY AND DIAGNOSIS.

The Diagnosis of Unilateral Renal Hematuria.¹—By means of the cystoscope and ureteral catheterization the diagnosis of unilateral renal hematuria is usually not difficult, says Haynes. But without direct inspection of the ureteral orifices and the use of the catheter the location of the hæmorrhage is uncertain. Nothing can be absolutely predicted as to its source from an examination of the urine, and the various segregators are unreliable; there are too many opportunities for error.

By means of the cystoscope, ureteral catheter and the posterior kidney pain, the source of the hæmorrhage having been located in one kidney, the determination of the cause is the next problem.

The conditions which may give rise to a hæmorrhage from one kidney are commonly calculus, tuberculosis, malignant disease or movable kidney.

1. The most common is calculus. A renal colic, the passage of sand or calculi in the urine, a photograph by the X-ray showing a dark shadow in the kidney make the diagnosis almost sure but blood clots may cause colic, calculi may come from the bladder or be intentionally put into the urine, and a pure uric acid stone throws no shadow under the X-ray.

2. Tuberculosis may be concluded on finding the "T. B." in the urine, or by inoculating experiments, by finding tubercular foci in other parts of the body and from rapid loss of weight. Yet at times a small circumscribed tubercular lesion can exist without giving any evidence of its presence other than by the bloody urine.

3. A malignant growth attended by the tumor and cachexia may be plain, but if present to this degree the case is hopeless for surgical intervention, and earlier diagnosis may be absolutely impossible if no cancer cells are found in the urine. A severe cachexia not unlike that of malignant disease may be present from excessive loss of blood, and a tumor may be felt that is benign in its nature but which is causing the hematuria.

4. If no other condition is found except that the kidney is abnormally mobile this may be the true cause.

5. Hematuria from a renal hemophilia would furnish evidences of this condition in the family or personal history of the patient.

Diagnosis of Rupture of Lung.¹—In the majority of cases the diagnosis of the ruptured lung is not difficult, says Le Conte; the physical signs present will clearly indicate the injury. There is one condition, however, in which an error in diagnosis may easily be made, viz., rupture of the diaphragm with displacement of the stomach or large intestine into the pleural cavity. In this condition there would be the same shock, dyspnoea and cyanosis, with rapid heart action, as would be present in rupture of the lung. The tympanitic note of the hollow bowel could hardly be differentiated from a pneumothorax, and metallic tinkling, two coin test, etc., might also be present. There would probably be a dry, hacking cough on account of compression of the lung. The tympanitic note, however, should not extend to the apex of the pleura as the lung would be crowded upward, and there should be breath sounds at the apex as well as over the root of the lung. Nausea and vomiting should be prominent symptoms in rupture of the diaphragm on account of the compression, perhaps strangulation, of the gut, and as the case progressed these symptoms would become more and more marked. In rupture of the lung nausea and vomiting, when present, appear soon after the accident and do not continue after the stomach is emptied. In both rupture of the diaphragm and of the lung there may be displacement of the heart to the right side, and in both in the beginning there may be entire absence of heart dulness.

The two main differences then would be the prominence of vomiting in rupture of the diaphragm and the fact that the tympanitic note would not be universal over the pleural cavity. However, if the lung is partially glued to the chest wall from a previous attack of pleurisy, we may have breath sounds present over certain areas, with vocal fremitus and resonance, even when the lung has ruptured and a portion of the pleural cavity is filled with air.

¹Irving S. Haynes, M. D., *Annals of Surgery*, March, 1908, p. 417.

¹Le Conte, p. 383 *Annals of Surgery*, Mar., 1908.

TREATMENT.

The Technic of Skin Grafting.¹—Rose describes the technic of skin grafting as consisting of the following steps:

a. Clean the skin of the leg somewhere above the ulcer with a little soap and water or a little alcohol and flush off with salt solution (common salt, 1 dram, boiling water, 1 pint). Flush off the granulations with some salt solution. It is not necessary nor is it advisable to curette or rub or scrub them. They are all ready for the grafts.

b. Having sterilized a very sharp ordinary razor and pocket-probe by putting them into 5-percent carbolic for fifteen or twenty minutes, lay them in some salt solution. Then moisten the skin that is to furnish the grafts, put it on the stretch with one hand, while the other, holding the razor as for shaving, with a sawing motion, and without any pressure, cuts a very thin, translucent graft. The pain will be very slight if the razor is sharp and the graft is thin.

c. Spread the graft by laying the edge of the blade against the granulations, catch the end of the graft with the probe and, holding it still, withdraw the blade from beneath the graft. This spreads it. It may be moved to any position by means of the probe. Make the grafts overlap one another if possible, so as to cover completely.

d. Lay several thicknesses of silver-leaf (such as painters use) over the grafts and the area from which the grafts were removed.

e. Strap the leg from ankle to above the calf, as before, only smear that part of the adhesive that overlies the grafts with boric acid ointment, to prevent adherence to the grafts.

Remove this dressing in a fortnight, or two weeks. The ulcer and the denuded area will be found to be completely healed. Restrap the leg for a week or two. If necessary, later, wear an elastic bandage or stocking.

Ulcers or granulating wounds anywhere

on the surface of the body may be healed by this same method. When thus healed they are not liable to break down again, because they have a skin surface, and contain less scar tissue than is usual in such cases.

The Treatment of Gastric Hyperacidity.¹—Gastric hyperacidity due to excess of hydrochloric acid (hyperchlorhydria), as in neurotic hypersthenic gastritis, gastrosuccorhea and gastric ulcer, is best treated, says Hill, with a diet (fats and oils, eggs, bland starchy foods) which inhibits in a measure hypersecretion, but for the burning pain alkalis (sodium bicarbonate or citrate, milk of magnesia), given in ice-cold water, are very helpful at the time. Milk of magnesia is a valuable antacid remedy in the acid constipation with colic of infants and children.

Organic hyperacidity (lactic, butyric, acetic) of the stomach is caused by fermentation of sweets and fats and is favored by defective motor function. For this condition, as for simple atonic hypochlorhydria (the most frequent form of dyspepsia) hydrochloric acid in full doses (10 drops of concentrated, 30 drops of dilute) is our best remedy in most instances, and seldom needs to be accompanied with pepsin. In the writer's observation, the acid is best taken just before meals in one-half glass of water, slightly sweetened if desired, and the dose may be repeated once or twice after the meal. A glass tube should always be employed, and the mouth thoroughly rinsed with sodium bicarbonate after taking the acid. The mineral acids (hydrochloric and nitro-hydrochloric) are likewise of service as stimulants to hepatic and pancreatic secretion, and either of these two acids or aromatic sulphuric acid is often an efficacious astringent in curing a chronic lenteric diarrhea when other means have failed. They are also of some service in the treatment of flatulent indigestion and its accompanying oxaluria. Lactic acid antagonizes putrefactive changes in the intestine and may do much good (as butter-milk) in the summer complaint of infants.

¹J. T. Rose, M. D., *Am. Jour. of Clin. Med.*, p. 355, Mar., 1908.

¹E. G. Hill, M. D., *Am. Jour. of Clin. Med.*, p. 391, Mar., 1908.

Vasodilation in the Treatment of Disease.¹—Cook thus summarizes his paper on Vasodilation:

1. Sodium nitrite is the best vasodilator; it has the most enduring effects; is most stable and dependable; gives rise to fewest unpleasant symptoms.

2. Vasodilatation may be indicated with low or normal tension: *i. e.*, all uncontrollable hemorrhage, either: During operative manipulation; typhoid ulceration; gastric ulcer; pulmonary phthisis; other internal hemorrhage uncontrollable by surgical methods; aneurism; thrombus, etc.

3. High tension is abnormal, and is either the accompaniment of organic disease, or else presages its onset; in either case it demands treatment; first, by general hygienic measures; second, when necessary, by venesection or vasodilatation with drugs—preferably sodium nitrite.

Chronic Sigmoiditis² as outlined by Stern, the *casual treatment* of chronic sigmoiditis consists in the regulation of the functional activity of the sigmoid flexure. In my experience, sigmoidal spasm (and therefore many cases of intestinal occlusion) is readily amenable to atropine in practically every instance. To this end, the alkaloid should be given hypodermically, in doses of 0.0006 gram (1-100 gr.), which should be repeated until relaxation of the affected parts has ensued. When the spasm is less pronounced, but occurs on the slightest provocation—a factor which stands at the foundation of so-called spasmic obstipation—a mild nervine-narcotic, administered by the mouth or in the form of suppositories, will generally give the best results. Lupulin is probably the most effective, and at the same time an innocent, enteric nervine-sedative. Enterospasm of this nature is often permanently overcome by the long-continued administration of lupulin in daily doses of from 2 to 4 grams. Lupulin, in the following combination, may be found of service in the motor neuroses of the sigmoidal segment of the colon.

R Lupulini
Strontii bromide . . . aa 0.15
Ft. caps. d. t. dos. No. L.
Sig. Two capsules 3-5 times a day.
R Lupulini 0.3
Pulvis ipecacuanhae .002
Ft. caps. d. t. dos. No. XX.
Sig. One capsule 4-6 times a day.

Strychnine and kindred tonic medication have in my hands proved very inefficient in overcoming intestinal atony of any degree. Drugs of the class of lupulin have proved in my experience decidedly more valuable in the treatment of intestinal motor insufficiency. In all sigmoidal neuroses I have often prescribed to advantage lupulin in the form of suppositories (in hollow glycerogelatin cones if possible), which I ordered to be introduced as high as possible into the rectum. However, medicines are the least effective remedial agents which are at our disposal in the management of long-continued sigmoidal lethargy. Regulation of the diet is the foremost curative factor. A regimen in which the proteids preponderate leaves very little residual matter in the intestines and tends therefore to obstipation. One, in which the carbohydrates occur in abundance, is productive of flatulence and intestinal hyperfermentation and therefore of mucosal irritation. The diet, best suited for sigmoidal lethargy, is one in which green vegetables like spinach, lettuce, savoy cabbage, string beans, and absorbable fats with comparatively high melting point, like the yoke of the egg, predominate. In the ratio in which the motor mechanism improves may the amount of green vegetables and fats be reduced, to be replaced by proteids and carbohydrates. The sugars are the carbohydrates producing the least digestive difficulty.

However, it is best to defer the ingestion of starches for as long a time as possible; when the functional activity of the sigmoid has been definitely re-established they may be permitted in small amounts. No matter how well individuals who have been subject to intestinal motor insufficiency feel at the time, starchy foods should always be partaken of by them sparingly. Yolks, and in a measure also, the green vegetables, should compensate for the loss of nutritive elements.

¹ H. W. Cook, M. D., Jour. A. M. A., Feb. 29, 1908.

² Heinrich Stern, M. D., Med. Record, p. 341, Feb. 29, 1908.

The next important means in overcoming sigmoidal atony is exercise, active as well as passive. Of course, the active exercise must not exhaust the patient, as over-exertion would not only impede his improvement, but would probably cause an aggravation of the atonic state. Walking is a good mode of exercise, but swimming is greatly more efficient as a rule. Calisthenics, promoting the vigor of the abdominal organs, are very useful.

Tuberculous Cystitis.¹—Tuberculous cystitis requires prompt treatment on account of its gravity. Medical treatment should be first tried and addressed to the tuberculous diathesis—country air, rest, cod-liver oil, creosote, cacodylate of soda:—

Creosote, 1 drop.
Iodoform, 1-3rd gr.
Arsenate of soda, 1-50th gr.
Ext. of opium, 1-5th gr.
For one pill. Three daily.

As local treatment, instillations of iodoform, 5 per cent.; guaiacol, 1—20; corrosive sublimate, 1—5,000 to 1—1,000; which Guyon considers the best treatment of tuberculous cystitis. Nitrate of silver should not be employed in the first stage of the disease, as it might provoke congestion of mucous membrane, and even hæmaturia. But in the second stage, or that of secondary infection, instillation of a solution of nitrate of silver gives, according to Le Fur, excellent results. Irrigation of the bladder is always counter-indicated on account of the extreme sensitiveness of the mucous membrane. When the general and local treatment fail, recourse might be had to surgical treatment. The bladder will be incised in the supra-pubic region, and the granulations removed by the curette and the superficial ulcerations cauterised with the thermo-cautery.

In cases where the tuberculous ulcerations are consecutive to tuberculosis of a kidney, the removal of this organ completely cured the vesical disease, proving the intimate relation between renal and vesical tuberculosis.

Stomach Surgery.¹—Stomach surgery, according to Ochsner is limited at present to: 1, Closure of defect due to perforation by ulcer, wound or to rupture; 2, the establishment of drainage in obstruction of the pylorus due to neoplasms, cicatricial contraction, indurated ulcer or hour-glass stomach in the adult, and congenital stenosis in children; 3, the removal of neoplasms; and 4, (possibly) the correction of gastropnoia. He goes in detail into each of these groups. It may be stated as an axiom: 1, That certain conditions, like gastric perforation and gastric neoplasms, should receive surgical attention as soon as a diagnosis has been made; and 2, that other diseases of the stomach, like gastric ulcer and its sequelæ, should receive surgical attention whenever it becomes apparent that the condition can not be relieved by dietetic, hygienic and medicinal treatment. In regard to technic, he lays down the following general principles:

The amount of traumatism must be reduced to a minimum. The intra-abdominal organs must be exposed as little as possible to cold air or cool pads. The patient must be placed in a sitting posture as soon as possible after the operation. In case of closure of perforation, the direction of the wound must be chosen so as not to result in obstruction later as a result of cicatricial contraction. In case of excision of a neoplasm, all the tissue closely connected must be removed with the growth to the greatest extent possible in the presence of existing anatomic relations. In gastroenterostomy the lowest portion of the stomach must be chosen, no matter whether anterior or posterior gastroenterostomy be performed, the latter, however, being preferable. There must be no tension on any sutures in any gastric operation. Except in complete gastrectomy, the coronary artery must always be preserved. In patients with an unusually fat transverse mesocolon in whom posterior gastroenterostomy is performed, the opening should be torn very large and the edge should be sutured to the stomach in order to prevent obstruction. In case of acute gastric dilatation following any stomach operation, a stomach tube

¹Med. Press and Circular, p. 213, Feb. 19, 1908.

¹A. J. Ochsner, M. D., Interstate Med. Jour., Dec., 1907.

should at once be introduced and gastric lavage be employed, care being taken not to introduce more than one-fourth liter of water at a time. The simplest possible technic should be employed, preferably without the use of mechanical apparatus.

DIETETICS AND HYGIENE.

Nourishment of the Consumptive.¹—

Stern says that overfeeding alone does not prevent further bodily decline in phthisis; it may even give rise to an aggravation of the patient's condition by overburdening the digestive organs and by overproduction of alimentary poisons. It is futile to try to check bodily decline by forced feeding without taking into consideration the organs of digestion and the general assimilative capacity.

The treatment of the so-called wasting diseases resolves itself in the prevention of waste. The secret of success in the treatment of consumptive affections lies in the proper management of the organs of digestion and assimilation. The most potent factor in maintaining physiologic digestion and assimilation is an adequate food-supply, that is, a nourishment not only sufficient as regards the quantity, but one which the declining organism with its weakened or impaired organs is able to anabolize; one, in other words, which furnishes the needs of the specifically affected and altered organism. If the food is not adapted to the digestive and assimilative capacity of the patient, he will slowly starve, although his food-receiving organs may be filled with ingesta to the point of bursting. (Stern: *The Yolk Cure*, etc.)

The consumptive receives, as a rule, sufficient amounts of carbohydrates and proteids with his food. What he is in need of is fat, assimilable fat, fat which does not give rise to intestinal irritation, fat which is not objectionable to the taste, fat which may be ingested in large quantities and for a long period. The fat of the yolk of the hen's egg is the only one which fulfills all these desiderata. The details concerning

the "yolk cure" will be found in aforementioned papers. On this occasion I only wish to state that yolks should occupy a prominent place in the dietary of the patient affected with chronic ulcerative phthisis. I have found that an ordinary mixed diet in which the fat substances were simply replaced by yolks sufficed in many instances to bring about augmentation of weight and strength. If a patient, who is not in the last stages of phthisis, fails to build up while under the "yolk cure" we may feel almost certain that the latter is not properly executed, that is, the food partaken of, together with the yolks, is either not the right kind or is ingested in amounts not suited to the alimentary condition. When a general improvement of the patient's condition has taken place, it is no longer essential that the yolks form the only fatty ingesta; other fats, in limited amounts, may be added to the diet. If the yolks are taken for a protracted period—which ought to be the rule in any consumptive disorder—the proportion of the various types of nutritives may and must be altered according to the prevailing alimentary circumstances.

The whole egg may be well tolerated in certain cases; their amount during the day should, however, never exceed five or six on account of renal irritation and alimentary albuminuria which are apt to supervene when larger quantities of eggs are ingested. The frequent occurrence of alimentary albuminuria following the affluent eating of whole eggs (especially when they are in the raw or semi-raw state) ought in itself to be sufficient to stop the promiscuous employment of this article of food in the treatment of phthisis. Again, the "idiosyncrasy" for eggs is solely caused by the white of the egg. The augmented evolution of hydrogen sulphid and ammonia in the alimentary tract when half a dozen or more eggs are consumed during the day is due to the disintegration of the white of the egg and not to that of the yolk.

I have not met with an aversion for yolks in a single case of chronic ulcerative phthisis. From ten to forty yolks may be given during the twenty-four hours. The yolks should not be cooked but may be added raw to warm dishes and beverages. They may be incorporated with almost

¹ Heinrich Stern, M. D., Jour. A. M. A., p. 357, Feb. 1, 1908.

any foodstuffs, and with many liquids, as soup, milk, coffee, whisky, wines, etc. Variety of combination, incorporation and flavor facilitate the execution of the "yolk cure" and favor its continuation for almost any time.

The ingestion of large amounts of milk as advocated by many phthysiologists is not necessary when the "yolk cure" is being executed. Again, certain quantities of milk (skimmed milk when starting treatment) may be given together with the yolks, provided the patient's alimentary canal is in a proper condition to receive it.

Diet in the Treatment of Gout.¹—

Sikes notes that the general tendency, in recent articles is the recommendation of a simple mixed diet for the average case of gout. Also, it is now customary to modify the diet more to suit the individual digestion than to prescribe one which is free from this or that chemical element, as, for example, the quantity of purin. In average cases, meat is not contra-indicated, but the amount should be restricted to one meat meal in the day. It is usual also to consider the carbohydrate element of the food, and its effect on the liver, as of more importance than was formerly the case. Hence it is advisable to reduce the amount of carbohydrate, which is taken in the comparatively pure form, such as potatoes, rice, etc.

If we wish the digestion to proceed as normally as possible, and to avoid the absorption of imperfectly elaborated products, it is only rational to prevent the undue dilution of the gastric juice, hence liquids, during meals, should be restricted as much as possible.

Simple meals, limitation of carbohydrate, restriction of alcohol, and the drinking of non-alcoholic fluids between meals are the chief points to be remembered. Vegetarianism, fruitarianism, and even zomotherapy may suit a few, but they do not seriously concern us, when discussing the general conditions of a gouty diet.

Pruritus Vulvae.—Itching of the vulva, (*Am. Jour. of Clinical Medicine*), especially in pregnancy, may become so bad as to

cause sleeplessness, loss of appetite and flesh and great mental irritability. In cases of such severity the patient should not be left to carry out the treatment herself but the doctor himself should at once practice Ruge's antiseptic toilet of the vulva: The vulva, vagina and cervix are thoroughly washed with soap, all folds and creases in the mucosa being opened up; then the vagina is freely washed out with a weak sublimate solution, at least sixteen pints being used. This process lasts a quarter of an hour. One treatment usually definitely cures the patient, but Ruge usually performs the "toilet" two or three times, and applies to the vulva each sitting an ointment of carbolyzed vaseline. While there may be a purely nervous pruritus, the satisfactory effects of Ruge's treatment seem to show that, even in pregnancy where no objective local symptoms are present, the disease is often due to bacteria. For the less serious cases of pruritus vulvae, Skene advises:

Acidi salicylici 5.0

Lanolini 99.0

Misce et ft. ungt. Sig.: Apply three or four times daily.

FECAL MASSES A CAUSE OF URINARY RETENTION.

The presence of hard fecal matter in the rectum in patients suffering with gonorrhea may sometimes give rise to urinary retention owing to the resulting irritation. It is therefore well to bear in mind this fact, since under these circumstances an enema emptying the lower bowel will often be sufficient to relieve the retention.

ATONIC AMENORRHEA.

Amenorrhea due to deficient supply of blood—atonic, as it is called by some—may be greatly benefitted (*Am. Jour. of Clinical Medicine*), by the use of syrup of iodide of iron (syrupus ferri iodidi, U. S. P.) It is best administered in doses of 1 cc. (fifteen minims), one hour after each meal rather than at meal-time, when the iron is apt to unite with the tannic acid of the tea or coffee drunk and thus form ink, which is of no value, since tannate of iron is insoluble.

¹A. W. Sikes, M. D., *The Practitioner*, Mar., 1908, p. 396.

GENERAL TOPICS.

Therapeutic Optimism.¹—In a paper refreshing because of its delightful optimism, Konkle says: After all, disappointment as to the efficacy of drugs will be due not so much or not so frequently to their impotence as to our shortcomings of knowledge with reference to the indications for their employment. The warrant for the use of a medicine must rest in the conditions of the case in hand—as we understand the nature and features of disease more clearly and completely, the more unerringly we apply our remedies thereto. One would not be expected to display great accuracy of aim without a commanding view of the mark. So therapeutics must constantly follow in the wake of pathology. Disregard for this order of relationship would imply confusion of the logic of science with the caprice of hazard. In all reason, ignorance as to the cure of disease will maintain a fairly constant ratio of equality toward the ignorance existing relative to disease itself.

Medicine is but just accomplishing its transition from empiricism to science. Not only for forty years, but for forty centuries, had the angel of the healing art been wandering up and down the wilderness, a nomad of nomads, her home everywhere and nowhere, her sole habitation the enclosure of a tabernacle's unenduring and unstable curtains. Now she is conquering her promised land. Some time, perhaps ere long, nevermore to depart therefrom, she will enter her temple, the granite of whose walls will be knit into one with Zion's eternal rock. In any sphere of human activity whatsoever, a fundamental change of régime is signalized by a period of nihilism and chaos. Construction of the new presupposes destruction of the old. Russia in blood and ashes is the prophecy of a new-born Russia. In this philosophic conception we find an ultimate, a necessary cause of present-date nihilism in the province of medicinal therapeutics. Our new wine must be put in new bottles.

The central idea of the old system of medication was *specificity*. The single aim was to establish that any given drug is useful in such and such diseases. The dis-

covery of facts in this direction was purely accidental. The method of the late decades is to ascertain the physiological powers of drugs—to determine what they do when introduced into the system—to learn how they may be employed as instruments in the modification of bodily processes. Formerly medicines were mysterious, magic agents; now they are plain, simple tools. Of yore new seas of therapy were sailed at random and by chance; today they are navigated through means characterized by precision, accuracy, certainty.

Over-Feeding in Tuberculosis.—Pottenger, (*Medical Record*), asks: What can be accomplished by forcing a tuberculous patient to eat two or three times as much as is required by a person in health? In the first place, the chief aim in feeding should be, not the most fat, but the highest state of nutrition. This can only be produced by a selected dietary suited to the digestive, assimilative, and excretory powers of the patient. In tuberculosis all of these functions are impaired, and under these circumstances, let me ask is it wise, or even good common sense to stuff the patient with an amount of food only limited by the ability of the patient to swallow? such a course cannot help lowering rather than raising nutrition. The answer that is made when this procedure is criticised is that it has produced good results. We must grant that patients will put on weight in this way. Oftentimes they gain enormously, but that is not saying that such a course is best for them. Fat, quickly put on by forced feeding, is readily lost. The patient is not strong; he is not nourished; his tissues are not resistant; at the least provocation he loses much that he has gained. On the other hand, the use of enormous quantities of food overtaxes the digestive and eliminative system, and the patient sooner or later suffers more or less discomfort and finds that his recuperative powers are severely hampered.

Thrombosis and embolism are more apt to occur after removal of fibroids than after any other abdominal operation; hence the importance of special care in the post-operative stage.—*Inter. Jour. of Surgery*.

¹ W. B. Konkle, M. D., *Med. Record*, p. 394, Mar. 7, 1908.

NEWS ITEMS.

Association of Seaboard Air Line Railway Surgeons.—At the sixth annual meeting of this association, which was held in Tampa, Fla., February 18th, 19th, and 20th, the following officers were elected. President, Dr. L. S. Oppenheimer, of Tampa, Fla.; first vice-president, Dr. J. G. Dean, of Dawson, Ga.; second vice-president, Dr. H. M. Wilder, of Charlotte, N. C.; third vice-president, Dr. E. H. Terrell, of Richmond, Va.; secretary and treasurer, Dr. J. W. Palmer, of Alley, Ga. The executive committee is composed of Dr. James R. Rogers, chairman, of Raleigh, N. C.; Dr. Southgate Leigh, of Norfolk, Va.; Dr. J. W. Corbett, of Camden, S. C.; Dr. John M. Blair, of Monroe, N. C.; and Dr. John W. Miller, of Crosshill, S. C.

Health in the Navy.—Surgeon-General Rixey's recent annual report shows that for the past year the total number of deaths in the navy was 241, a ratio of 5.66 per 1,000. Of these only 144 were from disease, the others being due to accidental injuries, including 31 deaths by drowning.

Dr. Robert Tuttle Morris was elected president of the Medical Association of Greater New York at its last annual meeting. At a stated meeting of the association held February 17, 1908, Dr. Morris delivered an address, the subject of which was, Metaplasia of the Appendix Vermiformis and a New Diagnostic Point.

Army Medical Corps Examinations.—Preliminary examinations for appointment of Assistant Surgeons in the Army will be held on May 4th and August 3d, 1908, at points to be hereafter designated.

Full information concerning the examination can be procured upon application to the Surgeon-General, U. S. Army, Washington, D. C. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

Applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School, will not be examined in subjects of general preliminary education.

In order to perfect all necessary arrangements for the examinations of May 4th, applications must be complete and in possession of the Surgeon-General on or before April 1st. Early attention is therefore enjoined upon all intending applicants.

There are at present twenty-three vacancies in the Medical Corps of the Army.

Medical Society of the Missouri Valley.—The spring meeting of this society will be held in Lincoln, Neb., March 19 and 20, under the presidency of Dr. W. F. Milroy of Omaha, and the program is now open for contributions. Titles should be sent to the secretary early, as all papers will appear on the program in the order in which the titles are received, and the limit will be twenty-five papers. The call for abstracts of papers will be made on February 15, and no paper will appear on the program unless an abstract has been furnished by the author in ample time for publication. The profession cordially invited to attend and take part in the discussions.

If not a member, send in your application to the secretary, and become a member of the most wide-awake medical society in the middle West. No time is wasted in jealous bickerings, no society "politics" to interfere with its progress; true scientific advancement is the slogan and the success of this association, which is independent in character, is indicative of the broad culture and unselfishness of the men who comprise its membership. Initiation fee, \$1.00; annual dues, \$1.00. Chas. Wood Fassett, M. D., Secretary, St. Joseph, Mo.

PRELIMINARY TREATMENT BEFORE HEMORRHOIDAL OPERATIONS.

In persons suffering from hemorrhoids there are often conditions of irritation and congestion in the anal region which should be removed before resorting to operation. This can usually be done by thorough cleansing several times daily, especially after a stool, and by the use of some weak antiseptic wash. In fact, irritation about the anus may be responsible for more suffering than the piles themselves, and after its removal operation may subsequently prove unnecessary.

LITERARY NOTES.

Among recent publications, *The Quarterly Journal of Medicine* is especially noteworthy. Edited by Wm. Osler, J. Rose Bradford, A. E. Garrod, R. Hutchinson, H. D. Rolleston, W. Hale White and a strong board of collaborators, this splendid journal cannot fail to prove an inspiration to medical progress. The articles that have appeared in the two issues thus far published are notable contributions by famous medical men, and the typography and general appearance of the *Quarterly* is in thorough keeping with the quality of its contents. The illustrations are fine and well adapted to proper elucidation of the text. The *Quarterly* is a product of the Oxford Press, the source of many recent remarkable medical books.

The remarkable growth of bacteriological knowledge, and the development of laboratory methods have emphasized the necessity for elementary instruction on this important subject. Few books are so well adapted to their purpose as a very useful and interesting volume on *Infectious and Parasitic Diseases* by Dr. Millard Langfeld.¹ While primarily intended for nurses, the author has succeeded in producing a book which contains a large amount of valuable information. It cannot fail to prove of interest not only to nurses and physicians, but to general readers as well. Prof. Lewellys F. Barker in the introduction notes that the author has carefully avoided the use of terms and the discussion of questions which would be unintelligible to beginners in the subject. Some idea of the scope of the work will be shown by the titles of the different chapters: Causes of Disease; Bacteriology; Phenomena of Infection; Inflammation; Animal Parasites; Avenues of Exit of Infectious Agents and Parasites from the Body; Portals of Entry of Infectious Agents and Parasites into the Body; Portals of Entry and Avenues of Exit of Micro-Organisms in the Various

¹ *Introduction to Infectious and Parasitic Diseases, Including Their Cause and Manner of Transmission.* By MILLARD LANGFELD, A. B., M. B., Professor of Bacteriology and Clinical Medicine, John A. Creighton Medical College, Omaha. Philadelphia: P. Blakiston's Son & Co., 1907.

Diseases; Disinfectants and Disinfection; Collection and Examination of Secretions and Excretions. In the appendix weights and measures are given and a useful table of thermometric equivalents.

BOOKS RECEIVED.

A Mind That Found Itself.—An Autobiography. By CLIFFORD WHITTINGHAM BEERS. Published by Longmans, Green & Co., 91 & 93 Fifth Ave., New York.

Diagnosis and Treatment of Pulmonary Tuberculosis.—By FRANCIS M. POTTENGER, Monrovia, Calif. Published by William Wood & Co., 51 Fifth Avenue, New York. Price \$3.50 net.

Diseases of the Breast.—(With Special Reference to Cancer). By WILLIAM L. RODMAN, M. D., LL. D., Professor Medico-Chirurgical Coll., Phila., Pa. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Pa. Price \$4.00.

Woman.—A Treatise on the Normal and Pathological of Feminine Love. By BERNARD S. TALMEY, M. D., Gynaecologist to the Yorkville Hospital, New York. Published by Practitioners' Pub. Co., 55 W 126th St., New York. Price \$3.00.

The Battle Creek Sanitarium System.—(History, Organization, Methods). By J. H. KELLOGG, M. D., Superintendent. Published at Battle Creek, Mich.

SURGICAL HINTS.

In making a deep incision for whitlow it is important not to lay open the tendon sheath from end to end owing to the great danger of sloughing of the tendon.

In osteomyelitis it is always advisable to open up the bone even before the presence of pus can be positively determined, in order to prevent abscess, pyemia, or necrosis.

Before cutting a urethral stricture it is necessary to subdue any existing acute inflammatory process, as otherwise there is great liability of the operation proving a failure.

In operating for hammer-toe it is preferable to remove the articular surfaces of both phalanges in order to bring about an osseous union, and thus prevent any recurrence of the trouble.—*Inter. Jour. of Surg.*

Dr. Matas, No. 2255 St. Charles Avenue, New Orleans, La., writes that he is compiling the statistics of operations for the cure of aneurism by the method of intrasaccular suture (Endo-aneurismorrhaphy) and will be obliged to all surgeons who have had experience with this operation for a brief report of their cases.

American Medicine

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Clinical representation on the Council of Pharmacy and Chemistry was urged by the Section on Pharmacology and Therapeutics at the Boston meeting of the American Medical Association, and the following resolution was unanimously adopted:

"To the end that its work may be broadened and the results become of as great benefit as possible to the medical profession whose interests it must primarily serve, the Section earnestly recommends that a larger representation be given to clinical therapeutics by the election annually from the working membership of this Section of two members of the Council to serve for one year."

At last after the lapse of nearly two years, three active medical practitioners have been added to the Council, and a new board of clinical consultants has been created.

Although it is a matter for sincere regret that the Section on Pharmacology and Therapeutics has been so completely ignored in the selection of these medical representatives, there is every reason for satisfaction at the ultimate adoption of the fundamental suggestion. Certainly the plan to have two active medical members elected or nominated by the Section on Pharmacology had much to commend it, as it would not only have given the Association members a chance to take part in the selection of officials who would thus more ideally represent them, but it would have done much to disarm the ugly criticisms of ring rule and close corporation methods that have been

so freely directed against the present management.

However, the principal end sought has been accomplished and the practical broadening of the scope of the Council is a matter for sincere congratulation. The medical appointees announced in the *Journal* for March 21, 1908, are excellent, each man being above any criticism of commercial affiliation whatsoever, and splendidly qualified for any investigation in the domain of scientific therapeutics. No honest medical man can fail to appreciate such a progressive step, and one has but to scan the names of the new appointees to get ample assurance of the work that can now be done. The only possible chance for criticism is that the original suggestion of the Section on Pharmacology has been so long delayed in its fructification.

The Defence of Dr. Wiley by the *Journal of the American Medical Association* in two of its recent issues, naturally raises the question, why such spirited efforts in behalf of a public official who is presumably doing his duty faithfully and well? If he is efficient and his work is good he needs no defence. If he is incapable and a failure, no efforts of even so great a power as the *Journal of the American Medical Association* can save him from a deserved oblivion. The situation would appear to be pregnant with portentous possibilities and we hope our esteemed contemporary has not been

led by its zeal into committing a *faux pas*. Sometimes no prayer is so fervid as that which asks deliverance from over zealous friends and the defence of Dr. Wiley may precipitate rather than prevent the crisis in his affairs, that certain well informed individuals have anticipated for sometime.

One thing is sure, Dr. Wiley is a disappointment. He has proven to be a very ordinary man with only extraordinary ability for advertising himself and his opinions. If ever a man has worked the lay press for all it is worth, it is this same Dr. Wiley. With a keen sense of humor and a still shrewder sense of opportunity, he has played the game for all there was in it. Accuracy, scientific methods and the conservatism that the Government expects of its servants have seemingly been sacrificed for sensationalism and the spectacular. Like the proverbial moth whose short existence is generally brought to a close by some fateful flame, Dr. Wiley is today a victim of the lime-light. Intoxicated by its effulgent ray he has basked in it again and again. Discretion, judgment and common sense have apparently been thrown to the winds. Now, the light is fading and when it goes out as it always does, it is to be feared that it will leave a figure weak, frail and broken, more deserving perhaps of pity than of censure.

A man to be ever ready with opinions must have very great knowledge or a very faithful memory. Otherwise he is very apt to suffer the embarrassment that Dr. Wiley must feel when confronted with his conflicting opinions on the subject of alcohol.

Very recently Dr. Wiley, according to the *Journal of the American Medical Association* issued a signed statement as follows:

"I said that I believe the general effect of alcohol on mankind is *wholly bad*; that *it is bad even in small quantities*; that *if distilled beverages, such as whisky, brandy and rum, have any good effects*, they are due to the fact that the aromatic and fragrant substances therein stimulate the digestive secretions and *thus overcome, to a certain extent*, the bad effect of the alcohol which they contain. I said further, that I am in theory a prohibitionist, but that there are practical difficulties in the way of prohibition and that the better plan would be to abolish the saloons, and that if people want to drink distilled beverages they should do so quietly at their homes and with their foods, and not in saloons. *I made no reference whatever in my address to the term 'mollycoddle,' nor did I suggest or advise young men to drink liquor of any kind, but said that it was always bad.*" (Italics ours).

This is very good and very clear but the printed record of Dr. Wiley's testimony at hearings of the Committee on Agriculture is somewhat different, as follows:

On page 291 of the Reports for 1906 the following appears:

"MR. DAVIS—Have you changed your views about the effect of alcohol?"

DR. WILEY—No, sir, not at all.

MR. DAVIS—You believe that alcohol has nutritive qualities?

DR. WILEY—Alcohol has a distinct food value up to a certain limit.

MR. DAVIS—You agree with Dr. Atwater, then?

DR. WILEY—Yes, sir, I believe what he says on the subject is all true and correct. I made a special report to the Secretary of Agriculture, and I went over the whole thing with Dr. Atwater, and his experiments, and I think that alcohol up to 3 ounces is completely oxidized in the average human frame within twenty-four hours. *To that extent it is a food.*" (Italics ours).

On page 278 of the 1907 Reports is the following:

"DR. WILEY I think that pure spirits is a poison, *pure and simple*. It coagulates the protoplasm in the cells.

THE CHAIRMAN—You mean pure spirits?

DR. WILEY—Yes, alcohol. As long as any man can keep his cells limpid and his protoplasm limpid (sic) he will never grow old. Alcohol absolutely coagulates protoplasm the moment it touches it, but the alcohol that is in a whisky or brandy or rum is so mingled by nature's operations that it is an entirely different proposition. For instance, you take the ordinary field corn and put sugar on it, more than sweet corn has, and it does not taste like sweet corn. It is not sweet corn. Nature has a way of combining the elements in foods which man cannot imitate, and therefore when nature produces 20 different substances, as she does every time a whisky is fermented, and all 20 of them come over in the still, alcohol among them, then you put these natural elements away to become mellow, to marry (as the distiller says), which takes years to accomplish—it is a long drawn out ceremony—and you make a beverage which is tonic and wholesome and healthful and non-poisonous; and there is all the difference in the world between a drink of straight alcohol and a drink of whisky, brandy, or rum." (Italics ours).

Is there an intelligent man in the world who will make the unequivocal statement that whisky is a "beverage which is tonic and wholesome and healthful and non-poisonous?"

There is no denying the necessity of Pure Food and Drug Laws, but to accomplish the results for which they are created, their interpretation and execution must be based on common sense and sound conservative judgment. Freak ideas, snap opinions, personal antipathies and ill-founded prejudices should have no place in the enforcement of such laws. Unfortunately for himself, unfortunately for many industries and unfortunately for the American people, Dr. Wiley has been in-

vested with, or has been allowed to assume, too much power. His ideas and opinions no matter how unsound, erroneous or dogmatic, have run riot and a good useful movement has suffered accordingly. Now as his mistakes and weaknesses are being exposed, a change is taking place and one more demagogue may shortly be ruminating on the fleeting qualities of fame and earthly power.

The bedbug as a disease carrier has at last been caught in the act, but fortunately for us it is the tropical and sub-tropical species, *cimex rotundatus* or *macrocephalus*, and not our acquaintance of temperate climates—*cimex lectularius*. Capt. W. S. Patton of the Indian Medical Service has published the fact that the former pest is the agent for the transmission of the Leishman-Donovan Body which causes Kala-azar.¹ The parasite seems to go through extensive changes in the body of the bedbug which is therefore a true biological carrier. The northern bedbug has been suspected of all sorts of deviltry in the way of carrying diseases but always in a mechanical way. It was once thought that the spirochetæ of relapsing fever were thus conveyed, but Robinovitch has experimentally proved this to be untrue.² Nevertheless it is a matter of serious concern for there is considerable evidence that the bug is dangerous. It has been under investigation a long time, yet curiously little has been discovered. There is much that is mysterious about the transmission of several of our most prevalent infections and it has been suggested that an entirely unsuspected medium will probably be found in time. It might be well

¹ Scientific Memoirs of Officers of the Medical and Sanitary Departments of the Government of India, xx, 27, 1907.

² Berlin Klin. Woch., Nov. 11, 1907.

to keep the bedbug in mind in all such speculations for it has ideal chances of spreading disease in hotels and sleeping cars.

Eugenics is again occupying more or less attention, but happily this time it is fully recognized that the methods of the stock breeder are absurdly impossible. What we must discover now, is why mediocre families occasionally produce very high-types as well as so many bad ones, as though heredity were a myth. In some localities the great majority of criminals come from respectable families—the very ones we would select for breeding purposes could we manage mankind like sheep. Criminals of one generation produce but few of those of the next—so few as to be negligible in spite of the enormous attention given to the Jukes and a few other criminal families. The whole scope of Eugenics is then merely an investigation of the reasons for marked variations, with a view of teaching every man to rear children who will be better than himself or at least who will not bring his gray hairs down in sorrow to the grave.

Eugenics applies to the higher races which have already evolved the best brains through a long period of survival of the most intelligent in a rude environment in which nature ruthlessly destroyed the least intelligent. Variations are rarely marked and no one expects Darwins from Zulus. Yet natural selection of the above kind has ended for all time and must be replaced by artificial selection. The first step is the prevention of degeneration and when that is accomplished the intelligent races will not drop back, but if higher types also appear there will be a progressive improvement.

Heredity and environic forces is the subject of a remarkable address by Dr. D. T. MacDougal, Chairman of the Section of Botany, Amer. Ass'n for the Advancement of Science¹, which should be read by every physician and particularly by those who are interested in Eugenics and the prevention of degeneration and disease. He states that it is almost universally agreed that present living forms are the net results of the action of the environment on ancestral protoplasm—a law which physicians must take to heart more than they have. Changes from parental type are due to causes which interfere with what is called heredity. If the body alone is affected the modification is not transmissible as there is no evidence that such divergent characters are ever impressed upon the germ cells. Remove the causes and the next generation resembles the normal grandparents. Instead of the bizarre and unnatural proposals to prevent marriage of what we think the less desirable, we must teach hygienic living which causes regeneration—nature's greatest law of Eugenics.

Permanent changes of form, or transmissible variations, are possible only when the environment causes changes in the germ-plasm. MacDougal's experiments with plants, and those of numerous other workers with lower animals do show that permanent changes may occur and new species arise. It is the method by which variations or mutations arise to be selected for survival if nature so wills. It is the method of all evolution including man's. It is quite possible also that toxæmias and other adversities in men and women may so alter the germ cells as to produce per-

¹ Science, Jan. 24, 1908.

manent transmissible degenerative changes which cannot return to parental type, but there is no evidence for such a pessimistic view. There may be damage to the third or fourth generation as the old biblical writers observed, but ultimate regeneration is the rule. The racial outlook is bright and made ever brighter by every new discovery in preventive medicine in which pessimism has no place. It is not a question of reducing the death rate, but one of practical agencies—racial uplift as well as prevention of downfall. Even the botanists give comforting testimony of the sociologic importance of laboratories for medical research.

The dreadful treatment of Lamarck

is shown in a pitiful letter written in 1865 by his son, and now published by the Lamarck Memorial Committee¹. No other scientist has done so much to develop the modern theories of the environmental causes of variation and evolution, yet he was an "outsider" and was shamefully treated by the scientists of his day under the leadership of Cuvier. But for this conduct, modern medicine would be a half century in advance of what it is now. Scientists are now trying to undo some of this harm, and it is a good time to remind them, that the bigotry of Cuvier was very human after all, and that modern scientists are also human. Before attacking any new idea it is well to pause lest haply we injure the very science we are trying to defend. Who knows but that great and revolutionary truths of "outsiders" are now being as ruthlessly suppressed, as in the case of Lamarck, and that advance of civilization demands absolutely independent medical and scientific journals

which can never be censored by officialdom of the universities or any other officialdom.

The editorials in American Medicine

last month were followed by a great many commendatory letters from medical men who seem to be in thorough accord with our position relative to the U. S. Pharmacopoeia and National Formulary. We cannot answer every letter personally and so take this opportunity of expressing our sincere appreciation for the kind and encouraging communications we have received.

Existing conditions in medical matters call for thoughtful, temperate consideration. The problems that confront the medical profession are not simple but complex. To solve them will require earnestness, intelligence and good will. Personal prejudice and precipitate judgment will prove the worst of stumbling blocks. Let us, therefore, approach each question with minds open to conviction, ever eager for the truth no matter how many idols are thrown down, nor whose opinions are shown to be wrong. Above all things, let us fight bigotry and that most abhorrent of all human mistakes—intolerance. No one is wholly right and by the same token, no one is wholly wrong.

How lucky, then, the man who does not measure everything with his own yard stick!

Once upon a time there was a Man, A Good Fellow, who was ambitious. He early learned the lifting power of the Glad Hand and by dint of Judicious Pats upon the shoulder and Sundry Other Blandishments he managed to get a Strangle Hold on a good official Job. Then the whole Aspect of the World changed. The Job was noth-

¹ Science, Jan. 24, 1908.

ing so very wonderful and did not carry any Slaves, Concubines, Sacred Elephants nor Durbars with it. Neither was the Annual Pay Check so very large for in spite of the most Assiduous Coaxing it never swelled to more than a Few Thousand Dollars.

But the Job conveyed some Power and a Duty spelled with a great big beautifully illuminated D.

Mr. Good Fellow became at once Mr. Authority-with-a-Duty and he saw as never before what Rascals his fellow men really were. Their Morals, Customs, Habits, Methods, Motives, in fact Everything About Them were all wrong. They were Enemies to Society, a Menace to Progress, Slaughterers of the Innocent, Grafters, Parasites, Liars, Crooks and one or two other kinds of Moral Reptiles. Mr. Authority-with-a-Duty saw that he must get busy. With his Duty held conspicuously before him he raved and preached, criticised and condemned, pointed out Weakness after Weakness, Evil after Evil and showed how the Jaws of Hell fairly yearned for those who did not straightway get next to the Call of His Particular Duty.

And then one day Somebody did get next,—and found out that his Duty was not only mislabelled but that it was fearfully adulterated with Personal Ambition, Self Love and Political Preservative. And then—Somebody Else got the Job, and he went forth “unwept, unhonored and unsung.”

Moral—Holding an official position is not a guarantee that a man is not misbranded within the meaning of the Pure Deed and Trust Act.

Prevention of infant mortality is the shibboleth of civilization and it is in marked contrast to the uncivilized way of letting the poor little tots survive or perish according to their congenital ability to stand unsanitary conditions. Survival of the fittest was survival of the strongest, now it is survival of the children of parents having the most sense and knowledge. The savage mother loses three-fourths of her children, but the modern high class woman raises 90 per cent. of hers. The old way caused the survival of the powerful whether they had sense or not, but the new way preserves those of inherited brains whether they have a good physique or not. The average physique is therefore becoming less powerful because it is no longer needed for survival. The “new man” must escape dangers which the savage could endure.

Rural life for urban children is the paradoxical outcome of the trend of civilization's efforts to save the city babies formerly doomed to early death. Playgrounds are now being planned in every progressive city—numerous shady playgrounds, so situated that the children can easily reach them and live in them by day and every day. This movement is another of the scores of ways in which mankind is instinctively returning to natural ways of living and raising offspring. It is making a wholesome village life in the midst of crowded cities. What a pity it is impossible to bring the cows in too, so that the babies can have fresh milk instead of pasteurized stuff 72 hours old, from cows kept 200 miles away in some filthy barn-yard. If city populations are to survive, they must scatter to rural conditions.

ORIGINAL ARTICLES.

SYPHILIS.*

BY

W. P. McINTOSH, M. D.,

U. S. P. H. & M. H. S.,

Portland, Maine.

"They say that the owl was a baker's daughter. Lord! we know what we are, but know not what we may be."

Shakespeare.

It is hardly necessary for me to call attention to the grave importance of the disease which is the subject of this paper. The subject of venereal disease is generally tabooed in polite society and perhaps rightly so. Morrow says, "Social sentiment holds that it is a greater violation of the proprieties of life, publicly to mention venereal disease than privately to contract it." Yet every one is interested; whether viewed from a medical, economical, sociological or philanthropic point. "Syphilis prevails among all peoples; occurs at all ages; it recognizes neither color, creed nor sex. Innocent and guilty; rich and poor; young and old alike, suffer from the ravages of this loathsome disease." If the physicians of this country and in Europe have found it necessary to organize prophylactic societies, to institute popular lecture courses and issue pamphlets in order to educate the people and warn them against the raging danger of venereal disease, it is only right for every one to do their part.

Dr. C. F. Marshall, a translator of Fournier, says in regard to the treatment and prophylaxis of syphilis, "The problem of the prevention of syphilis is one which sooner or later will have to be grappled

with by all nations and that nation which first successfully deals with the problem will survive in the struggle for existence." So much good has been and is being done in the control of tuberculosis that we may feel sure that an enlightened public will soon take up the fight against venereal diseases, for it is entirely due to lack of proper information, or ignorance, that these diseases, which number their victims by the thousands, have been neglected. All who have read the current medical journals and magazines cannot have failed to note the great amount of space occupied in the discussion of this disease. The number of articles published and the widespread interest displayed in the subject of venereal disease is certainly on the increase (1). "During the period from 1903 to 1906, four hundred and ninety-eight articles appeared in the leading medical journals, dealing with syphilis alone." In looking over three of the leading journals, which I myself read, I find one hundred and fifty-eight articles on syphilis published during the year 1907. In some of these articles several hundred cases were reported. A conservative estimate would be ten cases to the article. Each case reported must have contracted the disease from some other case, so that if each public report dealt with one case it would give us over twelve hundred cases, but as each report dealt with about ten cases, there were at least twelve thousand cases reported and more, *probably twenty to forty thousand.*

Judging from the work that is being done by the medical profession in most of the large cities, it is fully awake to the importance of the subject and the public is beginning to sit up and take notice. It is certainly time, since for thousands of

*Read before the Clinical Society, Portland, Maine, March 13, 1908.

years the innocent have suffered along with the guilty. No doubt it is in the memory of the youngest here, when "clap" was considered no worse than a bad cold and syphilis or "old rhal," was considered filthy but not especially dangerous. Both were referred to in a joking manner and were largely treated by the druggist or "herb doctor." The origin of syphilis is probably lost in the dim aisles of antiquity. There has been much fruitless discussion regarding the time of its first appearance, but evidences of this fell destroyer, whose progress age cannot stay, nor time diminish, is found in the bones of prehistoric peoples, and among all nations, descriptions of it are found in the earliest writings. Hoan Te, a Chinese writer, who lived about 2637 B. C., described it. Japanese writers described the disease several thousand years ago. The Hebrews were well posted in regard to the disease. Hippocrates and his followers described it among the Greeks and Celsus among the Romans. Syphilis is found in every country and every place. In 1495 A. D., an epidemic of syphilis occurred in the French army which was fighting against the kingdom of Naples. The whole of Europe suffered from this epidemic. It is claimed that the disease was entirely unknown among savage peoples until they came into contact with civilized nations. It seems peculiar, but the same observation applies to tuberculosis. While climate does not appear to materially modify the virulency of syphilis, certain races seem to offer less resistance to the disease than others. Chinese syphilis is regarded as peculiarly virulent and I have heard a great deal of the extreme malignancy of Mexican syphilis. These observations, no doubt, apply to the class in hot countries who are

uncleanly in their habits. I know for a fact however, and from personal observations that the mulatto or mixed blood negro of the South when he contracts syphilis, develops a very malignant type. These people offer very little resistance to any glandular or suppurative disease. The full blood negro on the other hand, seems to enjoy a certain immunity and when he contracts the disease, will completely recover if given proper treatment. It is, however, difficult to get them to continue treatment for any length of time, so the disease hangs on in various degrees. This has led some writers to believe that syphilis is more than ordinarily disastrous to the negro race—it is so only so far as it prepares the ground for tuberculosis. A French surgeon, Dr. Peyronie (2), who has had considerable experience among the Arabs of North Africa, states that among many Mohammedans, the disease is looked upon as a holy visitation and that the possession of a syphilitic necrosis of the bones of the nose is regarded as an honor. We could supply the poor Arabs with men, literally covered with honors. One writer states that among 4,000 Arabs, who consulted him, only one hundred were free from syphilis in some form. In spite of the fact that so many of these people suffer from syphilis, tabes and other paralytic affections are comparatively rare or unknown. This seems to militate against the teachings of Erb and Fournier, that these diseases are closely identified with syphilis. In the Surgeon-General's report of the United States Public Health and Marine Hospital Service for the year 1905, four thousand six hundred and ninety-five cases of syphilis are reported. During the same time eleven hundred and six cases of tuberculosis were reported, or more

than four times as many cases of syphilis as tuberculosis. The report of the same service for 1906, shows 4126 cases of syphilis and 1069 of tuberculosis. Still about four to one. These men receive thorough and conscientious treatment so long as they apply for it, but the trouble here as well as elsewhere, is that the sailors do not remain in the hospital long enough to be entirely cured and they do not take their medicine when not under the doctor's care. Another point worthy of observation is that the tubercular cases are sent to a sanatorium, but the syphilitics are let loose to spread the disease to other members of the community. The service has no option in the matter. There is no law by which syphilitics can be restrained, although suffering from a contagious, loathsome and filthy disease. In his report for 1906, the Surgeon-General of the Army says: "Venereal diseases were again by far the most important factor affecting the efficiency of the army during the year. The discharge rate 3.06 against 3.41 was slightly less than during 1905, but the constantly non-effective rate was increased from 12.37 in 1905 to 13.09 during the past year. There were constantly on the Sick List Report for this class of diseases, seven hundred and thirty-nine men, *equal to the loss for an entire year of the services of about eleven companies of infantry.*" (A higher rate than any other army except the British). The ratio of syphilis was 28.60, tuberculosis 5.19. That is more than five times as many cases of syphilis as tuberculosis. In the report of the Surgeon-General of the Navy for the fiscal year of 1907 he says: "Venereal diseases caused a decided loss of efficiency. Venereal diseases give a total of 140,352 sick days which is equal to the entire loss of the services of three hundred

and eighty-four men for the year." There were 1,211 cases of syphilis and 206 cases of tuberculosis; that is, nearly six times as many cases of syphilis as tuberculosis.

In the Navy and Army the tubercular cases are also sent to a sanatorium, but the syphilitics must run at large. It is well to stop just here and consider the seriousness of such a state of affairs. Only men who are sound mentally and physically are eligible to enlistment and still a large number of these become infected in a few years and not a few incapacitated, which is just so much loss to American manhood. When we take into consideration the sequelæ of syphilis, such as rheumatism, diseases of the eyes, bones and skin, lesions of the nervous system, etc., the economic problem again faces us. From the standpoint of time lost and money distributed in pensions the question is of importance, but what is of more weight, is that these men along with all mankind, have a right to expect protection from contagious diseases. Education will do much, but restraint of some kind should be enforced, not only of the men but also of the women, the source of infection. Isolation should be carried out until the infected person is no longer capable of transmitting the disease and persons whose disability arises from this cause should be given reduced pensions, when retired. Even during the years of struggle for liberty through which this country passed, cognizance had to be taken of the ravages of venereal diseases. The Continental Congress found it necessary to take action and on the 6th of January, 1778, Congress voted, "That the sum of ten dollars be paid by every officer; the sum of four dollars by every soldier who shall enter or be sent to any hospital to be cured of the venereal disease, which

sums shall be deducted out of their pay and an account thereof shall be transmitted by the physician or surgeon who shall have attended them, to the regimental paymaster, for that purpose, the money so arising, to be paid to the director-general or his order to be appropriated to the purchasing of blankets and shirts for the use of sick soldiers in the hospital." Such a law at present would keep some of the hospitals well supplied with blankets and shirts. Dr. Heinrich Schwiening (3), a German army surgeon, gives some interesting statistics regarding the existence of venereal disease in several armies of different countries. Speaking of the German army, he says that in 1903 it was composed of 590,859 men; 11,393 of these had venereal disease, syphilis affecting 2,401. He also shows that venereal disease has decreased since 1870, and that the civilian contributes a larger proportion to the venereal list than does the soldier. Bearing in mind that the Continental nations have compulsory military service, every healthy male of suitable age being compelled to serve, a comparison was made between the sick of venereal disease in the German army, (1.8%), with the proportion of recruits suffering from the same trouble, (7.3%), and it was found that the civilian population as represented by the recruits contributed five times as many cases to the venereal list as did the army.

Etiology. Acquired syphilis belongs to the same class as tuberculosis, leprosy and glanders, being of the infectious granulomata. Once infected the removal of the chancre and the adjacent glands will not check or modify the disease. Syphilis is most probably due to the *treponema pallida*, discovered by Schaundin and Hoffman in

1905. To prove conclusively that this is the pathogenic organism giving rise to syphilis, the postulates of Koch demand that in addition to other requisites the germ must be cultivated. So far as I am aware this has not been done. The *treponema pallida* is a very thin filiform protozoon, spiral or cork-screw like in form. It is constantly found in the primary, secondary and tertiary lesions of syphilis. It has been found in products obtained from higher and lower apes which have been inoculated with syphilitic virus. It is also said to have been recovered from the cornea of rabbits inoculated with syphilis. The *treponema pallida* is not found in non-syphilitic lesions, therefore seems to bear an undoubted causative relation to syphilis. Sezary (4) is of the opinion that the microbiological examination for the *treponema* can determine accurately the diagnosis of syphilis, and if the technic is well observed the negative results will be few. We have no certain method of serum diagnosis and if inoculation experiments can not be carried out, reliance must be placed upon the histological study. William J. Butler thinks however, that we have a certain means of diagnosis in the serum reaction for syphilis (5). "The investigations of Bordet and Gengou establish the fact that when antigen is brought in contact with its specific antibody, a combination occurs in which a third substance, known as complement, if present, is anchored. They employed this principle to demonstrate *in vitro* the bacteriological cause of an infection in an animal by mixing the suspected bacteria or an extract of them, with the blood serum of the infected animal, when if the specific antibody was present a fixation of complement occurred." Just

two years ago, March 1, 1906, Wasserman and Bruck (6) applied this principle to the diagnosis of syphilis. As antigen they used extracts of syphilitic organs or primary lesions. "They treated monkeys with such extracts taken from infected human beings or inoculated monkeys and with extracts of liver of dead luetic newborn. They later mixed the immune serum of the prepared monkey with the luetic liver extract in definite proportions in a reagent glass and found that in many instances a fixation of complement took place. They asserted that the reaction would enable one to demonstrate the presence of antibodies in the body fluids of syphilitics or to determine whether a given organ contained syphilitic substances. The principle consists in the fixation of complement. If you introduce the red blood corpuscles of animal A, into another of different species, B, the blood of the latter acquires the power of dissolving the blood corpuscles of A, when mixed with them in a reagent glass. This reaction is called hemolysis. This acquired hemolytic property is dependent upon two substances. One of these is present in the blood of every animal and is known as complement. It is thermolabile, which means that it is rendered inactive by heating the blood to 132 degrees F., for half an hour. The other substance which results from the reaction of the injected animal against the infected blood corpuscles, is thermostabile and is known as immune body or hemolytic amboceptor," (Fleischmann and Butler). These three substances comprise a hemolytic system. Their combination leading to hemolysis, which means that an opaque suspension of blood corpuscles is rendered transparent. The process is too complicated for ordinary use.

Recent Advances in Our Knowledge of Syphilis (7). "In the last few years more has been learned about the real value of syphilis than was learned in the preceding 100 years." This was due not to clinical observations, but to the wide dissemination of laboratories and enthusiastic workers in the same. The discovery of the greatest importance was the isolation by Schaundin and Hoffman in 1905 of the *treponema pallida*. This organism can usually be found in the primary and secondary lesions of syphilis and recently Dantrelpeone of Bonn has found the protozoon in four cases of tertiary syphilis. The *treponema* has also been found in the child after birth as well as in the fetus, in almost every organ, but especially in the liver, stomach and intestines. Zabolatin and Maslakovtz (8) have made some interesting observations regarding the motility and agglutination of the *treponema*. Bier's suction pump was applied to the surface of chancres or papules; by this method a large number of live *treponema* were obtained; at first these were lively with characteristic motions, turning and twisting like snakes. By adding physiological salt solution, the *treponema* may be kept alive in hanging drops for several days or a week. By adding the serum from a person who has suffered from syphilis for a long time, agglutination takes place, the *treponema* become crowded together and fused with their ends in star-like groups. Agglutination is complete in three or four hours. The specimen may be stained and the germs observed in their fixed position, thus proving that we have to deal with a specific agglutination reaction. In the opinion of Ehrman of Vienna, the germs of syphilis spread from the original point of infection along and even through the nerves. If true, this

would seem to confirm the idea of serious nervous diseases which we have heretofore attributed to antecedent syphilis. From the fact that the *treponema pallida* has been found in tertiary lesions, every person suffering from syphilis in any form must be considered as a possible source of infection. Hawkins (9) states as a fact a thing that is not generally known or heretofore accepted: "That syphilis may be contracted from the bodies of syphilitics dead for as long as twenty-four hours. Many well authenticated cases of infection from this source are on record." The immunity supposed to be conferred by one attack of syphilis has also proven an illusion in numerous cases. Although repeated infection is regarded as exceptional, many cases have been reported by competent observers. I have, myself, seen two cases in which the man, after recovery from syphilis, remained free from symptoms for more than a year, again contracted the disease, presenting upon examination, a typical primary lesion, which was followed in due time by secondary manifestations. Diday, in 1862, reported twenty-seven cases of reinfection and many others have reported one or two cases. Finger and Laudsteiner assert that a secondary infection is possible even before the first attack is cured. Neisser and Finger found that an ape inoculated a second time before the appearance of the chancre from the first inoculation or sometimes after its appearance, after a period of incubation, a second chancre would appear at the point of inoculation. No results could be obtained from reinoculation during development of the secondary eruption. Reinoculation was practicable in any other period, the secondary standing an exception. The re-

sults of such reinoculation were peculiar; for instance, when practiced in the primary period, the result would be a chancre; when in the period of tubercle or gumma, the result would be a tubercle or gumma. That is, the system responded to reinoculation with new virus in the same manner as it acted upon its own syphilitic virus. That this result was not due to trauma was proven by the failure of such an effect by the introduction into a syphilitic organism of non-syphilitic material. Another interesting point is made by Robert W. Taylor (10), to the effect that syphilis of the osseous system may and does occur at any stage of the disease, whether primary, secondary or tertiary. Taylor states that he has observed eleven cases of intra-primary syphilitic involvement of the bones in as many years. "In addition to the early bone lesions, early changes in the brain and cerebrospinal axis as shown by headaches, neuralgia and rheumatoid pains, pleuritic attacks, cardiac seizures, hepatic involvement, renal irritation, etc., are not uncommon before the secondary climax." Reinfection after hereditary syphilis has been observed so often that no one doubts the possibility of its occurrence. This has been named "binary syphilis" by Tornowski. Finger is of the opinion that immunity ceases about the age of puberty. One of the most important advances made in our knowledge of syphilis, has been derived from the experiments in inoculation of syphilis into animals. It has long been accepted as a truth that only mankind is subject to syphilis, but this fallacy has also disappeared and we now know that both the higher apes "especially those of African origin," the so-called anthropoids and the lower apes in various degrees are suscep-

tible to syphilis by inoculation with the virus. Fromme (10) claims to have inoculated dogs with syphilitic virus taken from the human subject. In two cases bits of penile chancre were inoculated in the anterior chamber of the eye, and soon after typical specific keratitis resulted. The period of incubation was sixteen days in one case and twenty-one in another. The treponema pallida was recovered from smears taken from the ocular lesion. Greff, a Berlin oculist, after producing syphilis in the eye of a rabbit by inserting a fragment of syphilitic gland, found the treponema in the rabbit's eye before any visible morbid changes had occurred, but with the gradual accumulation of the white blood corpuscles, the germs diminished in number and finally disappeared. This is an excellent example in confirmation of Metchinkoff's theory of phagocytosis in the prevention of disease. Muhlen (12) was able to demonstrate treponema in great numbers from the eyes of two rabbits inoculated six weeks before with juice from a gland containing the organism. A macaque (monkey) inoculated with scrapings from the rabbit lesion fourteen days later exhibited a typical primary lesion of the eyebrow. Scrapings from the chancre again gave rise to a keratitis about two months after having been inoculated into the rabbit. The treponema was also found in this lesion. According to the author this is the first instance in which a chain of transmission of the organism from man to rabbit, to monkey and again to rabbit has been carried out.

Neisser has experimented on a large scale in Java and produced symptoms similar to those of human syphilis in nearly all species of apes and monkeys. In 1906 Neisser succeeded in inoculating monkeys

with the virus from tertiary lesions. That the monkey really develops the disease is shown, *first*, by the fact that the treponema pallida has been recovered from the spleen, bone marrow, etc., of the inoculated animal; *second*, that the primary lesions developed only after a period of incubation, which is a little longer than in the human, average 24 days in man—from 29 to 50 days in the chimpanzee; *third*, virus obtained from a lower ape which has been inoculated and developed the disease, inoculated into a higher ape, will produce the same symptoms in the higher ape as is produced by the inoculation of human syphilitic virus; *fourth*, that the ape inoculated with simian syphilis, is immune against a second inoculation of human syphilis. (?) Absolute confirmation can only be obtained by the successful inoculation of a human being with simian syphilis. This will probably not be done for humanitarian reasons.

In Metchnikoff's laboratory, however, two instances of inoculation of humans from monkeys is said to have taken place. One of a voluntary inoculation of a woman seventy-nine years old, from virus from a macaque; the other, the accidental inoculation of a caretaker of syphilitic lower apes. No secondary symptoms developed in either case, although the treponema pallida was found in the lesions of the caretaker. The fact that reinfection can take place in syphilis, upsets our former views of immunity in syphilis. It proves, however, that the system has not complete but only partial immunity, the maximum of this immunity existing during the early part of the secondary stage. Therefore, when several ulcers appear in succession, as is frequently the case, after the development of the first lesion, they are not to be con-

sidered as due solely to mixed infection, but possibly to superinfection by the same virus. It should be borne in mind, their milder course may be due to the milder reaction of the partially immunized system.

(To be Continued.)

IS FOOD CONTAINING SULPHITES INJURIOUS TO HEALTH?

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PART I.

It was pointed out in a previous article that the matter of the expediency of using a particular food preservative calls for the consideration of three factors:

1. Is the preservative itself injurious to health?
2. Does the preservative lead to injurious conditions in the food to which it is added?
3. Do other considerations render it expedient to permit its use in food?

The present paper has to do with the first of these factors in regard to sulphurous acid and the sulphites, namely, are these substances in food themselves directly injurious to health.

The attitude of the physician as such has to do in this connection with only the question of health. We may feel that the use of sulphites in food is not expedient because of purely economic reasons and may be entirely in sympathy with those legislative enactments now being enforced in some communities to prevent the introduction of sulphites into food, but our attitude in regard to the final question of expediency should

not prevent an independent and correct answer to the immediate question of direct injury to the health of the consumer. Physicians are asked and will continue to be asked: "Are these things really injurious and if so in what way?" While undoubtedly we all have some notions in the matter, many of us, I venture, have given little attention to the inquiry which I have chosen for the subject of this communication.

It happens that the whole question of the use of sulphites has recently (October, 1904) received attention in the case Commonwealth of Pennsylvania vs. Charles W. Spencer, in which the defendant was found guilty of having sold meat containing fourteen grains of sodium sulphite to the pound. The scientific evidence introduced at the trial so summarizes the present state of knowledge and opinions upon the subject that it may well serve as a basis for our present consideration. It may be stated that the question is not in regard to the particular quantity appearing in this case but "whether that (the poisonous action) is the nature, the property, the quality, the effect."

We all agree, I take it, with the justice of the ruling of the Pennsylvania Supreme Court, that non-injurious quantities of substances essentially injurious are objectionable additions to food and constitute food adulteration. Perhaps we are not so clear as to what constitutes an essentially injurious or unhealthy property of a substance. It has been repeatedly pointed out, and, I believe, is well understood, that under some conditions most any substance, even those things that are essential to body maintenance, may become unfavorable to the processes of the body and so, in a sense injurious. Such an action is not, however,

an essential quality of the substance but a property arising from special circumstances, usually the quantitative relation. Thus, common salt is an important constituent of food. If taken in considerable amount, however, that is in a quantity several times what is ordinarily present in food, its action is distinctly unfavorable especially to digestion. Salt is so good a preservative that were it tasteless, so that an excess would not be recognized by the eater, there would be danger of adding it to food in too large quantities and it might even be necessary in the interest of the consumer to regulate by law its use for this purpose. In the same way nearly every substance has a certain limitation to its field of usefulness because an amount is reached capable of producing untoward effects. I think we shall agree, however, that we are not dealing here with an essentially injurious property but simply with the possibility of injurious action from excessive amounts.

Again, I believe we are agreed where the presence in food of a given substance does not serve any beneficial purpose and may produce an injury to the body, that its addition should not be tolerated. However, this phase of the question, as I have previously remarked, does not concern us here. Our inquiry is as to whether sulphurous acid and sulphites, when present in food, constitute an essentially injurious ingredient.

We may consider the action of sulphites under the following heads:

- a. In the gastro-intestinal tract.
- b. On the blood.
- c. On body nutrition.
- d. On the kidneys.

There are three modes of action in the stomach. First, the sulphites tend to neu-

tralize the gastric hydrochloric acid, since by reaction with it they yield a chloride and sulphur dioxide. This action is, of course, shared by all alkalies so that as far as the mere act of neutralization is concerned, we are not justified in branding sulphites for this property more than other neutralizing agents such as, for example, sodium bicarbonate. Indeed, this latter substance probably enters into the reactions of neutralization even more readily than sulphites.

If this action constitutes an essentially injurious quality it must be conceded that so far as neutralizing the gastric juice is concerned, all anti-acids are equal offenders. We know, however, that in the processes of secretion the stomach possesses a relatively wide range of physiological adaptation; that it does not secrete a fixed amount of acid which must meet the needs of gastric digestion but that the amount of secretion varies within certain limits with the needs. If, then, the hydrochloric acid secreted is at first neutralized by the food, and this is so in many instances, the secretion is continued till such a degree of acidity is reached as the proper carrying on of the digestive process demands. The mere fact, then, of any substance be it baking soda, the sulphites, or whatever it may be, possessing the quality of neutralizing the acid of the gastric juice does not constitute an injury till the quantitative relation reaches a degree that calls forth an excessive activity of gastric secretion, an activity approaching the physiological limit.

In quantity capable of doing this any neutralizing substance is certainly undesirable to the stomach. The fact of a substance possessing a neutralizing capacity does not alone constitute an essentially injurious quality since it merely calls forth a

physiological adaptation. It is only when the neutralizing capacity bears a certain quantitative relation that it becomes injurious. This relation may be reached by any anti-acid, even baking soda.

It has been suggested that a second mode of action in the stomach is the retardation of ferment activity. At one time the view was held that a substance inimical to bacterial growths likewise acts similarly in regard to enzymic processes, that it diminishes the chemical changes which these hardly definable yet very active substances occasion. It has been known for some years that this is not so, that antiseptics do not necessarily retard enzyme activity. I am not aware of any evidence that peptic digestion is retarded by the sulphites in food. Since from what we now know it is uncertain whether ferment action is accelerated or retarded by the presence of small amounts of sulphites we are not justified in forming an opinion on this point till proper experimental observations have been made. It may be said, however, that unless the retardation is reasonably well marked the action in this particular will probably be within the limits of physiological adaptability of the organism.

A third mode of action in the stomach attributed to sulphites is that of an irritant to the mucous membrane. In the trial referred to it was variously described as an irritant, corrosive, producing congestion, rupture of blood vessels, and gastric catarrh. It is well understood that the gastric membrane is composed of cells with protoplasm similar to other cells, that is, maintaining a certain normal osmotic tension and that very large quantities of any diffusible solute in close contact with such cells will more or less readily produce changes in the normal

osmotic tension leading to disturbances of the protoplasmic equilibrium and function. Such a property is of course not peculiar to the sulphites. It is possessed by all diffusible solutes. Chloride of sodium, common salt, is probably quite as great an offender in this regard. This, however, is a property purely dependent on the quantitative relation. In dilute solutions salines do not possess this property. In other words, again we have an action which is not due to an essentially injurious quality of the substance but is merely and entirely dependent upon the quantitative relation. It is not a property possessed by sulphites in particular but by all soluble, diffusible substances in general. The existence of such an action is an argument against the frequent ingestion of concentrated solutions of salines in general, not merely of sulphites in particular, and no argument at all against the ingestion of sulphites in dilute solutions.

Another possibility of irritation is that by the sulphur dioxide liberated. Attention is called to the irritating action of the fumes of burning sulphur and it is maintained that a similar irritating action is experienced in the stomach from the presence of sulphur dioxide or sulphurous acid. As to whether this is so or not has never been determined by experimental observation but has been inferred by some experts. Light is thrown upon the question by a consideration of the action of hydrochloric acid. We find here a substance which is a gas and which is present in the stomach in solution. Fumes of hydrochloric acid are very irritating, probably even more so than sulphur dioxide, but in dilute solution in the stomach no such property is manifest. The fact seems to be precisely the same with sulphur dioxide. The fumes of the gas are irritating but

the dilute aqueous solution is not known to be so. There is no reason for believing that the sulphites in food are at all irritating by reason of the sulphur dioxide liberated.

The whole matter of gastric irritation is capable of investigation in a very definite way. It is to be regretted that the opinions on this point of the plaintiff's experts in the Philadelphia case were not based upon competent experimental observations, since as yet no competent evidence is at hand that sulphites in food have an irritating action on the gastric membrane.

So far as I know it has not been suggested that there is any deleterious action of sulphites in the alimentary tract below the stomach, nor do I know of any possibility of injury in this location.

It has been maintained that the sulphites produce injury in the blood by causing anemia and by removing oxygen. As to the first of these, I have already pointed out that the sulphites, like other salts, may in large amounts produce gastric disturbances, not on account of any essentially injurious quality but entirely on account of their quantitative relations; that just as common salt in quantity may disturb digestion so may sulphites in excessive amounts. It is fair to believe that, as a secondary effect, resulting from the digestive disturbances, there may be anemia. So too it is presumable that the direct injection into the blood stream produces anemia. If the question before us was as to the advisability of giving sulphites intravenously there would be no question as to the position we should take. But whether the intravenous injection of sulphites, which means the introduction into the blood at one time of considerable quantity, is or is not productive of anemia has no bearing on the question

we are considering. There is no evidence that sulphites in food produce this result and we can conclude with a reasonable degree of certainty that they do not.

There is no question but that sulphites which gain entrance to the blood are oxidized to sulphate and that they accordingly and to just that extent remove oxygen from the blood. Does this constitute an injury? Prof. Vaughan leads us to infer that it does; when referring to sulphites he remarks: "14 grains to the pound would do just the harm that it takes to change sulphites to sulphates." Let us inquire carefully into this matter. It is a function of the blood to oxidize whatever material is brought to it, this process supplying body energy as heat, work and motion. Any exothermic reaction is a source of energy to the body. It is only endothermic reactions which absorb heat that deprive the blood of oxygen without giving a return. The oxidation of sulphites is not only an exothermic reaction but it is the identical reaction that is constantly carried on in the blood to supply energy. I refer, of course, to the formation of sulphates from the sulphur of the proteid molecule. This does not differ in kind but only in extent from the oxidation which Prof. Vaughan and others would lead us to believe constitutes an injury by depriving the body of oxygen. We may well ask what, then, is the oxygen for if not to enter into combination and by so doing yield body energy and why does its use for this purpose constitute an injury, especially when it yields a product which is a normal constituent of the blood? But neglecting the fact that the process of oxidation of sulphites in the blood yields energy, to what extent does it deprive the body of oxygen? The

oxidizing of fifty grains of sulphite requires in round numbers six grains of oxygen. A little calculation reveals the fact that we breathe somewhere about 30,000 times in the 24 hours and that the body receives upwards of 12,000 grains of oxygen as a result, being somewhere about 2.5 grain for each respiration. To supply the six grains of oxygen for oxidizing the fifty grains of sulphites would require, then, the oxygen supplied by fifteen respirations. Does anyone seriously believe that the increase from 30,000 to 30,015 respirations in 24 hours appreciably approaches the limit of physiological adaptation and that the organization suffers an injury because of the need of supplying in this way six grains of oxygen? If so, how about the 1,200 respirations supplying 475 grains of oxygen removed from the blood to oxidize a high-ball containing an ounce of whiskey? It hardly seems possible that the experts who maintained that sulphites are injurious because of the oxygen they remove could have thought of these things.

According to the testimony, the effects on body nutrition are indicated by loss of body weight, and emaciation. The opinions as to such effects are reached because of the results of feeding experiments on animals where very much larger amounts were given than are being considered here, experiments where, as we have already seen, the injury produced, if due to the sulphites, was the result of the quantity and not of any essentially injurious quality. We do not know that any such effect is produced in man and it is reasonable to believe that it is not. However, this matter is capable of proper experimental observation, so that there need be no doubt on this point.

There remains to consider the effect on the kidneys of sulphite ingested with food. Kionka's experiments and their repetition by Libbin and by Harrington are now well known. It has been pointed out that the keeping of animals in confinement itself in many instances leads to renal changes and that the excessive amounts of sulphites does not afford a criterion for judgment as to the effect on man of sulphites in food. The startling assertions of Kiouka have given way to claims of "much less extensive" renal injury on the part of those who maintain that the sulphites are injurious and "no evidence of injury" by other investigators. The experimental observations leave it doubtful that sulphites exert any injurious action in this direction, though the subject is worthy of further and more carefully controlled experimental study.

Summarizing, it is seen that the injurious action of excessive amounts of sulphites is similar in kind to the harmful effect of other salines in quantity; and that such action is due to the quantitative relation and not to any essentially injurious quality of the sulphites; that in the amounts added to food it is not as yet known that harmful effects are produced; that the action of the sulphites in the body affords opportunity for further experimental study, especially as to the possibility of gastric irritation, ferment inhibition and the production of renal degeneration changes. So far as their action is known it is their abuse in experimental investigation and not their use in food that has led to harmful results.

It is not the purpose of this review to champion the use of sulphites in food. As we stated at the beginning of this paper, whether such use is permissible or not must

be determined by at least three factors, only one of which we have considered. From what has been said we are not warranted in concluding that such use is expedient. As to that point we are not concerned in our present consideration of this subject. Even if their use is most objectionable on other grounds than we have considered we are not justified in taking an exaggerated view of the technical question which we have to answer. As biologists and physicians we are concerned with the correctness of our own statements and opinions and not with questions of expediency which may need to be considered in reaching a final conclusion. In answering the technical questions referred to us, the final interests of humanity are best served if we tell the truth, the whole truth and nothing but the truth.

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SUDDEN AND UNEXPECTED DEATH—A POSSIBLE CAUSE.

BY

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No doubt most physicians have been surprised by the great number of sudden and unexpected deaths occurring throughout the country. For the past three years I have been carefully examining the heart and pulse of patients coming to my office and also at their homes, in hopes of coming to some conclusion as to the probable cause.

Apoplexy, rupture of extra-uterine pregnancy, aneurism, heart disease, embolism, fractures of the skull, uremia, diphtheria, tyrotoxon poisoning, the improper use of morphine, chloral, and the coal tar preparations, all have their victims.

The most common causes of weak hearts are la Grippe, rheumatism, lithemia, tobacco and alcohol, but there seems to be another cause, namely, poisons from river water, in the form of acids, their salts, and the soluble salts of lead.

Our rivers are giant sewers, towns and cities dumping their refuse into the waters, including barrels of germs and filth, and deleterious chemicals. Is such filth good when filtered? I say "No." It is better than it was—it is comparatively free from germs, but not from chemicals.

It is often hard and has a metallic taste. In fact much river water is a super-saturated solution of germs and filth. It is very common to have patients call at one's office complaining of severe pain and soreness over the region of the pylorus and umbilicus, constipation and general weakness, while never mentioning the heart. Upon examining the pulse it will be found that it skips, beats, and is irregular. Children, as young as three years, who have never had la Grippe, rheumatism, diphtheria, or any other infection suffer from weak and irritable hearts. Our river water often kills the fish, corrodes the iron pipes in our mills and factories, the brass pipes in our hotels, eats through the strongest boilers, and in many instances is also destroying our mucous membranes, the arteries of our brains and the muscles of our hearts. It is true that the factories use up barrels and barrels of alkali to neutralize the acids in the water, but with so little success, that the water still has its destructive effect upon the pipes and boilers, sometimes eating through the pipes in the boilers in the course of three weeks to three months.

For the filtration of water, soda and alum are used in large quantities, so much so

that often the water is too hard for washing purposes, and needless to say, absolutely unfit for drinking purposes. While filtration has cut down the typhoid to nil, the alum and the other poisons in the water, give us a large number of weak hearts to treat. Lead seems to lead in the list of poisons, since the acids in the water corrode the pipes and the victim who drinks the water that stands over night is liable to get a toxic dose of lead. Years ago, Prof. H. C. Wood claimed that river water, on account of the silicates it contained, coated the lead pipes, forming an insoluble salt of lead. Hence it was safe to drink river water out of lead pipes, but spring and cistern water out of lead pipes was dangerous. Things, however, have changed since the rivers have become the dumping places for mills, factories, hospitals and sewers. There are no more insoluble coatings of lead, and water passing through lead pipes is apt to be poisonous.

First, from the acids it contains; and *second*, from the soluble salts of lead, produced by the action of these acids on the inner surface of the pipes. The symptoms are very variable. Some have none other than weak, intermittent, irregular heart, others have gastro-intestinal symptoms, especially pain and tenderness about the pylorus, pain about the umbilicus, acute constipation, and some few have a trace of albuminuria. Some have all the symptoms of acute lead poisoning, while others have nothing but a little griping which lasts for months and years. These cases are frequently mistaken and treated for appendicitis, volvulus, rheumatism, typhoid fever, dyspepsia or liver trouble. These cases can be divided into three classes.

First. The gastro-intestinal—characterized by abdominal and gastric symptoms, lead colic, vomiting of large quantities of bile, and constipation. Some of my cases took as many as thirty enemata with large and repeated doses of laxatives in the course of several days before they were relieved of severe griping and symptoms simulating intestinal obstruction or appendicitis.

Second. The nervous—characterized by multiple-neuritis, disturbance of the pneumogastric, and double wrist drop.

Third. The cardiac—with symptoms of weak heart.

Following is a partial list of the forty cases on my records not including lead workers of any kind, tobacco hearts, rheumatic cases, nor organic heart disease, as I have carefully avoided such cases in making this report.

GASTRO-INTESTINAL TYPE.

Margaret K., 27th ward, Pittsburg, age 34. Was called September, 1906. History that she had been sick for the past six weeks, suffering from symptoms of typhoid fever. On examination I found her in bed prostrated, pulse very weak, a blue line on the gums, abdomen retracted, vomiting large quantities of bile, intestinal colic so severe that at times she was compelled to roll about on the floor, a slight rise of temperature, and constipation. Urine was examined and found to contain lead. Two quarts of the hydrant water was boiled to dryness and this also gave the lead test. Under treatment for lead poisoning and the use of spring water for cooking and drinking purposes she recovered in a few weeks.

William A., Frederick Street, Mt. Oliver. Mill worker, age 22. Had two severe attacks of lead colic, one in December, 1905, the other in March, 1907, ending in profound anemia, emaciation and prostration; had a blue line on the gums; was

so weak that he could scarcely walk about. During his last attack he took some twenty injections (enemas) in hopes of getting some relief. Salts, castor oil and senna tea were used in large quantities for the obstinate constipation. He was sent to the mountains where he immediately began to recover.

NERVOUS TYPE.

A. M. Brownsville Road, 27th ward, Pittsburg. A retired dairyman, age 62. Has been sick off and on for the past year, suffering from attacks of constipation, coated tongue, anorexia, pain over the pylorus, anteriorly. At one time I felt a swelling over the pylorus, so plainly that I feared cancer, but these symptoms all cleared up until six months ago when I was again called and found him suffering from all the above symptoms, plus double wrist drop, and the blue line on the gums. The diagnosis then was easy. He is still paralyzed in both arms. His wife frequently suffers from intestinal colic. There is about three hundred feet of lead pipe leading from the street to his residence.



A. S.—Weak heart with paralysis of both arms showing double wrist drop and atrophy of deltoids.

A. S. Proctor Alley, 31st ward, Pittsburg, age 38. An iron worker. Father of two healthy children. Had been suffering all summer from weakness with frequent abdominal pains. September he was taken with violent intestinal colic, vomiting of large quantities of bile, anorexia, coated tongue, severe pains over the entire body. I was called to treat him in November and found him suffering from multiple-neuritis, marked emaciation, tongue coated and abdomen retracted, blue line on the gums, unable to sit or stand, and with marked double wrist drop. Arm and forearm paralyzed. Knee jerks increased. Pulse weak and irregular. He moved his body about in serpentine manner by throwing his head from right to left, forward and backward. He had to be fed. When first called his pains were so great that he would lie in bed for a while, then on the couch, again he would roll about on the floor. Under potassium iodid, strychnine, electricity, massage, and the use of well or spring water for cooking and drinking purposes, he is slowly recovering, is free from pain, has a good appetite, can now walk about. Still suffers from paralysis of both arms.

Mrs. B. P. 31st ward, Pittsburg, age 30. Mother of two healthy children. Was called to see her January 10th, 1908, obtaining a history that she had been sick for the past year, suffering from constipation, frequent vomiting of large quantities of bile, blue line on gums, severe abdominal pains radiating about the umbilicus, so severe that she was compelled to roll about on the floor. Pains and cramps in the arms and legs. Great weakness and prostration, with severe headaches, palpitation of the heart, weak and irregular pulse. Had to take several deep breaths in order to get a satisfactory one. Her pains were so severe that her physician was compelled to give her frequent hypodermic injections of morphine. Complained of a bad taste in the mouth. She suffered from marked insomnia and her sleep was disturbed by unpleasant dreams. She was profoundly anemic, could scarcely get about on account of the weakness of her limbs and both her arms were paralyzed; she had been unable to hold her baby since Sept., 1907, on account

of the inability to use her hands. She was unable to read and suffered from double vision,—objects on the wall seemed to sway. She was afraid to look at the crayons of her parents on the wall for they seemed to be continually nodding their heads; on the floor she would see hundreds of reptiles with tails crawling about her, which frightened and made her so violent that it took three people to hold her. Speech was incoherent. Under two weeks treatment and spring water for drinking and cooking purposes these hallucinations of sight and other symptoms of commencing insanity entirely disappeared. Her appetite is now good, she sleeps well, and



Mrs. B. P. Case of weak heart and paralysis of both arms, showing double wrist drop.

is in the best of spirits, and the diplopia has disappeared. On account of the poor water supply they were frequently without water from three days to a week, consequently the water in the pipes was stale and saturated with lead. She was in the habit of drinking large quantities of this water.

Two of the seventeen cases where heart symptoms predominated.

G. M. Mt. Oliver, age 68. Retired blacksmith. Sick since October, 1906.

Was called to treat him in February, 1907. Found him suffering from shortness of breath, being compelled to walk about on account of great dyspnoea, the tongue was heavily coated, he had pain over the pylorus, and frequent eructations of gas. His greatest difficulty to use his own words, was "to get back of his breath," being compelled to take two or three deep breaths before he could get a satisfactory one. This patient would get up in the middle of the night and walk for hours at a time owing to great dyspnoea. Often I feared that he would be brought home dead on account of his weak and irregular heart, yet he was so nervous and restless that I could not induce him to stay in bed. His heart would beat four and skip one, beat five and skip one, beat seven, skip one, and beat one hundred twenty, skip one, and so on. He was certainly a good candidate for sudden death. He was in the habit of drinking large quantities of hydrant water.

Mrs. J. N. Larkins Alley, Pittsburg, age 42. Was called to treat her October, 1907, and found her suffering from severe colic, pain about the umbilicus. The pain she referred to as grinding. Blue line on gums, marked constipation, complained of being unable to get a satisfactory breath. Pulse fifty-seven beats to the minute, would beat two—skip one, beat four—skip one, beat two—skip one, beat eight—skip one, respiration was twenty-eight. Pains were so terrific that every breath was a groan. She used nothing but hydrant water for drinking and cooking purposes. Under treatment for lead poisoning and the use of spring water she rapidly recovered.

I have several times heard good clinicians, with hospital experience, speak of having cases of very weak hearts, which rapidly succumbed and for which they could attribute no cause. These were cases without any valvular, lung, liver or kidney disease. Why is it that in acute disease at present we so often find weak hearts which really cannot be accounted for by the disease present? Just as alcoholics are unable to stand pneumonia on account of

the weak condition of the heart muscle, so also are these cases unable to stand acute disease on account of the weakened condition of that organ. I have frequently been compelled to give repeated hypodermic injections of strychnin, atropin, nitroglycerin and digitalin in this class of cases to keep the heart going. One child of twelve years of age in whom the poison affected the pneumo-gastric nerve was given eighteen hypodermics of atropin in the course of nine days, it being the only drug to which the weak heart responded. Perhaps if this question is looked into more deeply, considering the fact that our eatables are cooked with river water, that our foods are preserved and our thirst is quenched with the same poisons, we will find a cause, at least, for a large number of cases of dyspepsia, ulceration of the stomach, apoplexy, nephritis and sudden death. My father, who is chief veterinary surgeon of Greater Pittsburg, informs me that this condition of affairs is very common among horses and that the horses so affected are weak, stumble about, unable to work, pulse weak and intermittent. The Zoo located on Smithfield Street about two years ago and containing many specimens of valuable animals, had to leave this city on account of the animals being unable to stand the water. The manager told me that the back of the sea cow became ulcerated, that several monkeys died with gastro-enteritis and that one of the baboons had both arms paralyzed, thus showing the destructive effect of the water on the lower animals.

In conclusion, I would offer the following:

First. Laws should be enacted preventing the dumping of chemicals as well as sewerage into the rivers.

Second. Where there is a spring or a well the health authorities should take steps to prevent the pollution of the waters—not to close them up if they find a few typhoid germs, but to wall them up properly, have them well cleaned and made free from disease germs, so that the public may safely drink from them. It is better to drink *boiled* spring water, even though it contained a few typhoid bacilli, than to drink and cook with river water, saturated with strong chemicals, that are slowly and surely destroying the vital organs of many of our people and paving the way to a sudden death.

Third. Advise people to drink and cook with spring or rain water until pure water is obtainable.

Fourth. In the morning, all the water that has been in the lead pipes over night should be drained.

Fifth. Where practical iron pipes should be used instead of lead. For distilleries, breweries and food preserving establishments pure spring water should be used.

Acne Vulgaris.¹—In a practical paper on the Treatment of Acne Vulgaris, Sutton says of the external applications, lotions are the cleanest and most pleasant to use. In the milder types he has found the following time-tried prescription extremely satisfactory:

R Zinc sulphate, gr. xxx;
Sulphur, precipitated,
Potash, sulphuretted, aa dr. j;
Water, enough to make, oz. iv.

Dispense in a dark bottle. Care must be taken that the sulphuretted potash is fresh and not tried out. The mixture is to be well shaken and applied with a cotton swab, night and morning.

¹ Sutton, *Therapeutic Gazette*, Feb. 15, '03, p. 80.

There is not in the nervous system that perfect unity found in the circulatory apparatus of the blood; nevertheless differentiation into cerebrum, cerebellum, medulla, cord, cranial, spinal, and sympathetic nerves is as much a convention for convenience in description as an actual distinction. As one painful tooth can set all the other teeth in a jaw aching through continuity of nerve-cells, so other nerves of the body are related; and an irritation in the orbit may cause trouble in the occiput or even in the distant stomach, and indirectly disturb the general health. Flushing of the skin in a neuralgic tract is an effect of disturbance in the vasomotor nerves of the sympathetic system, which in themselves may have nothing to do with the neuralgia; and many cases of chronic conjunctivitis are caused by similar vasomotor disturbance, passing through a complicated series of nervous links from ciliary nerves irritated by striving to overcome hyperopia. A nervous disturbance sufficient to bring on a bleeding conjunctivitis is so profound that if it occurred elsewhere in the body it would attract marked attention, but familiarity with this conjunctival condition has blunted the mental impression upon observers. If such an eye-disturbance can bring on blepharitis, it necessarily must deeply irritate other parts of the nervous system.

It is a commonplace fact in medicine that pressure in the nose, throat, and mediastinum from abnormal growths, distant congestions and edema, irritations of the digestive tract, diseases of the liver, heart, and kidneys, can all cause chronic cough—another evidence of the wide reaching effect of nervous disturbance.

The optic nerve, strictly speaking, is not a nerve, but a cerebral tract. Morphologically it is the same as those tracts which join any part of the cerebral cortex with a primary centre. The retina is to a great degree representative of the cerebrum, and the pulvinares of the optic thalamus, the anterior quadrigemina and the external geniculata are the primary centres.

It is not necessary to go into the finer details of anatomy here, or the late changes in our knowledge of nervous origins and connections, as we wish to show only certain gross relations among the nerves. Stimulation of the optic nerve causes an instant reflex contraction of the pupils through the oculomotor or third cranial nerve, the origin of which is connected with the corpora quadrigemina, but this tract extends on into the medulla. If the stimulus is very strong, the lachrymal nerve, from the ophthalmic division of the fifth cranial or trifacial nerve, reflexly causes a secretion of tears.

When the visual centres in the occipital lobes are stimulated, phenomena of light and color, or even visual hallucinations, result. These facts prove the existence of a communication between the optic nerve and the third and fifth cranial nerves and the cerebral occipital lobes.

The third cranial or oculomotor nerve arises in the oculomotor nucleus, which is a continuation of the anterior horn of the spinal cord. This nucleus is directly connected with the nuclei of the fourth and sixth cranial nerves: thus all the nerves of the ocular muscles are joined at their centres. As was already said, the origin of the oculomotor nerve sends fibres to the corpora quadrigemina and beyond, and thus it is united with the optic nerve also.

From the nucleus of the third nerve run three sets of fibres: one goes to all the external muscles of the eye (except the external rectus and the superior oblique) and the levator of the upper lid; a second set goes to the sphincters of the pupils, and may be excited reflexly from the retina; a third set supplies the ciliary muscle, the muscle of accommodation. The centres for the muscle of accommodation, the sphincter pupillæ, and the internal rectus muscle lie in direct relation in the floor of the third ventricle.

The oculomotor anastomoses with the ophthalmic division of the trigeminal nerve, through the lenticular or ophthalmic ganglion and its long root from the nasal nerve, and receives sensory fibres therefrom for the muscles to which the oculomotor is the motor nerve. The fibres from the sympathetic system also come to the third nerve through the lenticular ganglion from the cavernous plexus.

This oculomotor nerve, which moves the muscles of the eye, through its connection with the fifth nerve, sometimes causes spastic squint in teething infants. By way of the connection between the third nerve and the vagus, through the cervical sympathetic, intestinal irritation in children, as from worms or chronic diarrhoea, not infrequently brings on spastic squint. A vermifuge or the cure of a diarrhoea may be the correct treatment for some forms of squint, rather than an attempt at refraction. It is probable, however, that reflex irritations do not affect the eye and its appendages without the coexistence of some mechanical defect in these organs.

The fourth, trochlear or pathetic nerve has an origin continuous with the nucleus of the third nerve; it is also connected with

the nucleus of the sixth nerve. This fourth nerve is the motor nerve of the superior oblique muscle; it receives fibres from the fifth nerve which are sensory; and there are fibres coming to it from the carotid plexus of the sympathetic.

The fifth nerve in its ophthalmic branch is especially the sensory nerve of the eye, its appendages and the neighboring skin-surfaces. The origin of its sensory root anastomoses with the motor nuclei of all the nerves arising from the medulla except the sixth nerve, but the fifth nerve beyond the origin sends fibres to the sixth also. This nuclear connection alone would explain a vast number of reflex relations of the fifth nerve.

The ophthalmic division of that nerve gives off: *First*, the lachrymal nerve to the lachrymal gland; and from the lachrymal nerve run sensory fibres to the conjunctiva, the upper lid and the skin over the temple. *Secondly*, the frontal nerve, which, in its division into the supratrochlear and the supraorbital, gives sensation to the scalp up to the vertex and to the forehead.

There is a branch from the nasal nerve to the ciliary ganglion, the long root, and from this ganglion (called also the lenticular or ophthalmic ganglion) proceed the ciliary nerves. It is difficult to determine whether the lenticular ganglion belongs more properly to the third or the fifth nerve, but the tendency is to give it to the third.

The ciliary nerves are very important. They send motor fibres to the ciliary muscle itself and to the sphincter pupillæ; sensory fibres to the cornea; vasomotor nerves to the vessels of the iris, choroid, and retina; and motor fibres to the dilator of the pupil.

From the superior maxillary division of the fifth nerve arises the intraorbital nerve, which supplies sensation to the lower lid and the adjacent skin; and from the inferior maxillary are given off the posterior and deep posterior temporal nerves. Most of the sensory branches of the fifth when irritated cause a reflex secretion of tears.

The sixth or abducent nerve moves the external rectus muscle. Sensory fibres run to it from the trigeminus, and sympathetic fibres from the cavernous plexus.

The seventh nerve by its anterior temporal branch moves the orbicularis palpebrarum and the corrugator supercilii muscles, joining the supraorbital and lachrymal branches of the ophthalmic nerve. The malar branch also supplies the orbicularis palpebrarum, and connects with the lachrymal nerve. Some fibres go to the lower lid, and meet the subcutaneous malæ of the superior maxillary nerve. The seventh nerve communicates with the three divisions of the fifth nerve, the sympathetic at the cavernous plexus, and the pneumogastric.

- Through the cervical sympathetic the eye-nerves are connected with the pneumogastric, and thus a reflex relation between the eye and the stomach, and other thoracic and abdominal organs is affected. By way of the sympathetic and the second cervical nerve, the ocular nerves are joined with the great occipital nerve, and pain at the occiput is thus brought on by muscular imbalance.

The conclusion to be drawn from this sketch of the gross ocular nervous anatomy is that all the constituents of this group of nerves are so intimately related by numerous anastomoses that an irritation in one part may have very widespread consequences.

Here we shall consider only one source of irritation to the ocular nerves, that is, defects in the refractive apparatus. The refractive apparatus consists essentially of the cornea, the diaphragmatic iris, the lens with the ciliary muscle which adjusts this lens, and the retina, upon which the rays of light coming from an object are focussed. In looking at objects which are at a distance of about fifteen feet or more the refractive apparatus is relaxed, and, except the retina, passive in the reception of visual impressions. When we look at objects near us the ciliary muscle involuntarily curves the anterior surface of the lens just sufficiently to focus the observed object clearly upon the retina; and every removal or approach, however slight, of the object is accompanied by a relative variation in the curvature of the lens to keep the object in focus. This is the act of accommodation.

When the eye is normally constructed, accommodation is accomplished indefinitely without fatigue or irritation of any kind. If, however, the eyeball is so short that the macula lies before the natural focus of the lens, or so long that it lies behind that focus, or if the curvature of the lens surface or of the cornea varies in different meridians, or finally, if there is a combination of defective orbital length with either faulty lenticular or corneal curvature, or both, a difficulty arises in distinctly focusing the rays of light from an object upon the retina.

Suppose the macula is before the focus of the lens; then to have distinct vision the concavity of the lens must be forced to abnormal thickness to get the shorter focus; thus unnatural work or strain is put upon the ciliary muscle, and the ciliary nerves

are consequently exhausted and irritated; the irritation then passes back through the lenticular ganglion to the fifth or sensory nerve, and causes pain in the parts of the head supplied by the ophthalmic and superior maxillary divisions of this nerve; it may go to the third, fourth and sixth nerves and set up motor disturbances like nystagmus, hippus, chorea-like winking; it may enter the sympathetic vasomotors and produce chronic congestion of the conjunctival and postorbital vessels; pass through the sympathetic to the vagus and bring about nervous dyspepsia; and so on. Where there is hyperopic astigmatism the irritation commonly is greater than in cases of simple hyperopia.

Myopia is very rarely congenital; it is often an effect of hyperopia wherein the eyeball has been stretched in efforts to converge and accommodate, added probably to a coexistent vice of impaired nutrition in the eye tissues. While myopia as regards vision is a worse condition than hyperopia it brings on less nervous irritation, except in those patients in whom a tendency to myopic divergence of the visual axes causes nervous exhaustion, or in such cases as have mixed astigmatism. If to hyperopia is added muscular imbalance, especially in the vertical axis, the irritation is markedly increased.

The first obvious effect of ciliary irritation is headache. Dr. M. W. Zimmerman, in Philadelphia, in a study of 2,000 eye-cases, found that 71.3 per cent. suffered from headache, and Dr. de Schweinitz holds that fully 60 per cent. of these ocular headaches are brought about by astigmatism. Moreover in general cases of headache the percentage of patients whose trouble is caused by eye-strain is very large. We

have no accurate statistics in this matter, but there is little doubt that eye-strain is one of the commonest sources of headache.

Headache is functional or organic in etiology. The functional forms are toxic, from indigestion, uremia, rheumatism, diabetes, Graves's disease, bacterial infections, alcohol, tobacco, lead, and various drugs; neuropathic, in neurasthenia, hysteria, and epilepsy; circulatory, in hyperemia and anemia; migrainous, and reflex. The reflex group may be gastric, nasopharyngeal, auricular, dental, uterine, sexual, and ocular. The organic headaches may arise from intracranial tumors, cerebral abscess, leptomenigitis, pachymenigitis, mastoid disease, disease of the cranial bones, intracranial syphilis, vascular disease, encephalitis, disease of the frontal sinus, caries of the cervical vertebrae, acromegaly, and diseases of the spinal cord. There are about forty distinct causes for headaches, but ocular irritation probably produces more than any other agent. In seeking the source of headache, then, the first thing to examine is the eye.

That a patient has full vision at five metres distance proves nothing as regards eye-strain. It is not rare to find patients who read 5-5 type without spectacles who require a glass as high as a plus 4.00 sphere to remove the hyperopia. If the general practitioner can not approximately measure refractive errors with the ophthalmoscope, he can at least readily learn to recognize the congestion of the fundus which very commonly accompanies eye-strain, and then refer the case for exact diagnosis.

After headache, the most frequent neurotic manifestation of eye-strain is functional gastric disturbance—delayed diges-

tion, flatulence, hyperacidity, nausea and vomiting, and consequent constipation. The irritation passes from the fifth nerve through the cervical sympathetic to the pneumogastric and thence to the stomach. So frequently is this irritation the cause of nervous dyspepsia, especially in women who are obliged to use the eyes in close application to work, that the eye should be examined as a routine practice in all cases of nervous dyspepsia. Persistent gastric disturbance in pregnancy also is often checked by relieving eye-strain when nothing else avails.

There is a twitching of the palpebral and adjacent muscles observed in children suffering from eye-strain, which can not readily be differentiated from true chorea. This winking and twitching is cured by proper glasses, whereas true chorea, fortunately a rare disease, persists. In such cases the prognosis should be guarded, but in any event relief from eye-strain is to be given.

Like this disturbance is a condition, due also to eye-strain, which can not be differentiated from true epilepsy; therefore in the treatment of epileptiform seizures eye-strain, if it exists, is to be removed.

In the manifold evidences of neurasthenia the irritation of an existent eye-strain is to be taken away before any hope of cure can reasonably be entertained. Neurasthenia, which is a disease capable of differentiation as distinctly as hysteria or similar neuroses, may be cerebral, spinal, cardiac, gastrointestinal, or sexual. It usually begins in disposed subjects after the shock of some grave and sudden physical or moral insult, but its onset may be gradual. The irritation of eye-strain in a neurotic subject could in itself induce neurasthenia, but such cases

are rare where a clear diagnosis of neurasthenia is possible. Eye-strain as a contributing factor in resistance to treatment is, however, as important matter; and it is useless to look for cure where an obvious refractive error is neglected.

In all these irritations the seat of the trouble may be in an imbalance of the ocular muscles, static or dynamic, rather than in the refractive media of the eyeball, and the conclusion to be drawn is that in persistent headache, nervous dyspepsia, pseudo-choreic and pseudoepileptic conditions, and neurasthenias, all possible eye-strain must be taken into consideration in the treatment.

In America where the irritation of excessive sunlight upon races whose normal habitat is the cloudy region of northern Europe produces deleterious effects, very small errors in refraction bring on serious disturbance, and these must all be reckoned with. In northern Europe if a patient is refracted down to a half-dioptre of what he actually requires he does well in the majority of cases; in the United States we must refract down to one-eighth of a dioptre.

Tinea Tonsurans.—The cure of tinea tonsurans (Cocks, *Med. Record*) demands long and persistent treatment. The patient should wear a muslin nightcap and be isolated. The hair is to be clipped, thirty or more hairs to be epilated daily, and the following ointment rubbed in with a stencil brush twice a day.

R Ung. hydrarg. ox. rub. ʒiiss,
Ung. sulphuris, ʒiii,
Ung. aquæ rosæ, ʒi.

**TOXIC AMBLYOPIA FROM WOOD
ALCOHOL.¹**

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The following case occurred in the service of Dr. David Webster at the Manhattan Eye, Ear, Nose and Throat Hospital, and presents some unusual and interesting features.

Patient came to the hospital with a history of having been blind in both eyes for twenty-four hours. He was a painter by trade and had been working for the past three weeks in shellacing the interior of beer vats. Three days before admission he had had an attack of vertigo and nausea which caused him to leave work for the day. The following day he resumed his employment, but complained during the afternoon of imperfect vision, and had a second attack of nausea and vomiting. He went home early that afternoon, and went directly to bed. During the night he found that he could not see well enough to go about the room, and the next morning his vision had entirely gone, so far as he was able to ascertain. He came to the hospital the day after this loss of vision, and was admitted on December 6th, 1907.

On admission the patient (G. S., aged twenty-three) was examined, and by means of the ophthalmoscope it was found that the fundi of both eyes were in a state of hyperemia, the vessels being markedly engorged. Both optic discs were obscured by a swelling of their substances, which was particularly great above and below, but not so marked on the lateral aspects. The right eye presented this picture in a more marked degree than the left, although the veins and arteries of both fundi were swollen as far as the observer could trace them.

¹Case presented before the Academy of Medicine—Ophthalmological Section, Feb. 17th, 1908.

The patient was put to bed, and free diaphoresis was induced by calomel, sulphate of magnesia and pilocarpine, aided by hot packs applied to his body. Leeches were also applied to the mastoid region. In consequence of the circulatory engorgement of the eyes it was thought best not to use the Bier method of enforced hyperemia. On the second day iodide of potash was given in increasing doses and strychnine hypodermically, starting with 1-50 gr. and increasing 1-100 every day.

The patient remained totally blind for ten days. On the eleventh day he perceived shadows in the left eye. Vision in that eye slowly increased up to 3-200 after which there was no further improvement. The vision in the right eye began to improve two weeks after admission, when he saw shadows. The right eye is now able to perceive large objects, but has not improved in the past month of treatment. The appearance of the fundus of each eye is now that of partial optic atrophy, the right being more atrophic than the left. The engorgement of the blood vessels gradually passed off as well as the swelling of the discs.

This case is remarkable in presenting from the start a typical picture of neuroretinitis, which is common in toxic amblyopia by inhalation. The engorgement of the blood vessels was a great deal more extensive, covering apparently the entire fundus of each eye, than we usually have in such cases. Also, the fact that the patient remained blind for ten days in each eye, and yet has regained some little sight is somewhat unusual, as where blindness is total from the start and lasting as long as ten days it usually remains permanent.

As to the outcome of this case the vision has apparently slightly fallen in the past two weeks, but the color of the optic discs still showing some circulation gives ground for hope of some vision ultimately remaining. Another favorable symptom is that the field of vision in the left eye is not

markedly restricted, as one would suppose from the amount of damage done to the eye; there is still a very fair field, although laterally, and above and below, the right eye has a greatly damaged field.

This case presents some points of interest as to the precautions to be taken by workers who use shellac containing wood alcohol. This man was compelled to go down into the interior of the vats to do his work, and had done so for three weeks before he began to feel any ill effects from his work. Apparently it was the close confinement of the air in the vats which caused the damage.

This case also is rather unusual in having occurred solely and only from the inhalation of the fumes of shellac. It is not so uncommon, unfortunately, for wood alcohol to give such a picture if taken internally in bulk, but the extreme degree of damage to the patient in this instance was not complicated by any such cause.

The practical lesson to be learned in this case is the urgent necessity for workers using shellac or wood alcohol in confined spaces to leave their work at frequent intervals, and to have very much shorter hours of such work than are usually followed. If this patient had been able to stop work at the first symptom of nausea, he probably would have escaped any very serious damage.

616 Madison Ave., New York City.

Diagnosis of Renal Hematuria.—In the diagnosis of renal hematuria the cystoscope according to Balloch is invaluable. By its aid we can learn from which ureteral orifice the blood is escaping, and also make ourselves certain as to the presence of a second kidney. Supplementing the cystoscope by the ureteral catheter, we can determine that the blood is from the kidney and not from the ureter.

DERCUM'S DISEASE: REPORT OF A CASE OCCURRING IN THE COURSE OF ADVANCED TUBERCULOSIS.

BY

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AND

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The case we desire to present to you is one that we have observed for the last six months. We take the liberty of reporting this condition with a three-fold object in view: *First*, because it is an unusual nervous disease. *Second*, because it occurs in a tuberculous subject; and *Third*, because it may throw some light on the etiology of this malady.

The case under consideration concerns a female 39 years of age. She has had lung trouble for about 5½ years.

Family History: Father and mother living and well. Three brothers and one sister living and well. There is a family history of tuberculosis. No history of cardiac, renal, or malignant disease.

Personal History: Patient was breast-fed. When one year old she had gastric disturbance. Has had typhus fever and occasional sore throat. Otherwise has been perfectly well.

Menstrual History: Menses began at 16. Has always been regular, except for the last 2½ years. She had pain before, during, and after menstruation, which pain has ceased with the birth of the first child. There was considerable loss of blood which was in part clotted and in part fluid.

Patient was married at 20. Has had two children, both living. About five years ago patient had an operation, which, from her statement we presume to have been a hysterectomy. This was done at the Pennsylvania Hospital.

History of Present Illness: This began rather suddenly about 5½ years ago. She

coughed about 2½ weeks. Following this a hemorrhage occurred, which lasted 2 days. The trouble then ceased for 3 years, during which time she emigrated from Russia to America. Upon her arrival she complained of cough and expectoration. The expectoration was at first white or mucoid in character, later yellow. There was no pain until one year ago, but there was considerable loss in weight. Her pulmonary condition progressed; she has had several hemorrhages, and physical examination, as shown by the chart, gives considerable evidence of lung involvement. For the last year she has been complaining of pain and weakness in her arms, legs, back and anterior portion of the chest, as well as of a tired feeling and



an increase in fat. These pains were variously diagnosed at different times. Repeated examinations were made until at one of them, small, painful masses were noted in the axilla, at the elbow, and at the knee. These masses were painful on pressure and these have now become so marked as to leave no doubt about the diagnosis.

Physical Examination: Patient is a female, aged 39, dark complexion, somewhat

dyspneic. Pupils not dilated, no hectic flush, tongue coated, pale, protrudes in the median line, somewhat tremulous. Pupils react to light and accommodation. No extra-ocular palsy; no nystagmus; thyroid apparently absent; no enlargement of the lymphatic glands of the neck. Slight curving of nails.

Examination of Lungs: Showed advanced tuberculosis.

Examination of the Heart: Apex beat in the fifth interspace in the mid-clavicular line. Palpation reveals no thrill. The right border lies 2 fingers' breadth beyond the right border of the sternum. The upper border lies three fingers' breadth beyond border is in the second interspace. The left median line, three fingers' breadth below the left border of the sternum. On auscultation there is an accentuation of the muscular sound at the mitral orifice; while the second aortic and pulmonary are not accentuated. No murmurs are audible.

Examination of the Abdomen: Inspection shows a scar of an incision in the median line, three fingers' breadth below the umbilicus. There is a bulging of the lower part and a depression of the upper part of the abdomen. Palpation reveals a pulsation of the upper aorta. The lower margin of the liver can be felt three fingers' breadth below the costal border at the mammary line. The lower border of the stomach extends to the umbilicus. The spleen extends to two fingers' breadth below the costal border. Percussion confirms palpation.

Examination of the Extremities: The lower extremities show marked deposits of fatty masses, more diffuse in the lower; particularly in the legs. These are painful and irregularly deposited. In each axilla are small masses, which are painful to touch.

Neurologic Examination: Knee-jerks are somewhat increased; no spasticity; faint plantar reflex is at times attainable. On the right side and also at times on the left, no ankle clonus is obtained. No Gordon; no Oppenheim; no Babinski. Station and gait normal. Sensations normal.

Blood Examination: Hemoglobin 71%. Red Cells, 3,760,000. White Cells, 8,200. Color Index 84 per cent.

Urine Examination: Acid specific gravity 1020. Alb. sugar absent. Indican increased. Diazo present. Muc. epith. Few hyaline casts. Leucocytes.

Sputum Examination: Elastic fibers present. T. B. fibers present. Epith. Red and white cells and mucus, pneumococci and pus organisms present.

It is a well established fact that the tuberculous toxin is capable of inducing a neuritis and we also know that in tuberculosis fatty changes are going on in the liver; it is therefore reasonable to believe that this fatty change can occur in other portions of the body, namely, the subcutaneous tissue; and if we consider these facts well established, as undoubtedly they are, we have an adequate explanation of the adiposis. We also wish to bring forth the fact that thyroid extract has not benefited the patient, an evidence that every case of adiposis does not depend on some pathologic lesion of the thyroid gland, as would seem to be indicated by a few necropsies performed on patients suffering from this disease.

THE COMMON RED ROACH AS A PROBABLE SOURCE OF OXYURIS VERMICULARIS.

BY

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In 1891 while a student in the Biological Department of the University of Pennsylvania, I caught a number of small red roaches in a bakery where they were crawling by the thousands. At that time we were receiving instructions on parasites. I took a number to the Bio-

logical Laboratory and placed one under a testing microscope and carefully tore found a small thread-like worm about the size of a pin worm. I examined a hundred or more roaches and in each one found a single parasite. This struck me as being very peculiar. I later made inquiries among my patients, asking them diplomatically if they were troubled with red roaches, and got them to catch me some. I examined these and found the same parasite. I then made inquiries as to whether any of the family suffered with seat or pin worms and in every case found that they did. The anatomy of the roach worm is identical with that of the pin or seat worm and I believe it to be the same, except that in man it is a trifle larger. I account for this by the fact that they take on a larger growth in the new host. The worm is transparent, and with a testing microscope of low power, one can make out the entire anatomy of the parasite. I have found both male and female, the female is constantly throwing off eggs and the uterus is full of them. The eggs show the most beautiful examples of segmentation that I have ever seen; they are elliptical in shape and segment rapidly. I showed a specimen to the late Prof. Ryder and also Dr. Leidy just previous to their deaths; neither at the time were able to give me a report on account of illness. My theory is that persons are infected, particularly children, by roaches crawling over the food, particularly bread, a bread-box seeming to be the place they are most frequently found; and as people who are careless about the kitchens and pantries and bothered with other insects are mostly the poor, so are pin or seat worms found most frequently in that class of persons.

OESOPHAGOSCOPY¹

BY

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In presenting to you the results of my work in the field of oesophagoscopy, I simply desire to speak of the results of some of my examinations, of which I have kept a record, and to consider to what extent these investigations have supplemented the clinical observations.

The instrument used by me is the Mikulicz oesophagoscope, a description of which is unnecessary in this assemblage. The position of the patient's body was horizontal, with the head hanging down over the edge of the table in such a manner that buccal cavity, pharynx and oesophagus formed a perpendicular line. All my examinations, with the exception of one, were done under local anesthesia, for which I employed a 20% cocaine solution in my earlier work. After having had a case of cocaine poisoning, I concluded to try a 10% solution and the results were equally satisfactory.

In two instances I failed to introduce the instrument because of my inability to overcome the nervous excitability of the patient. In my last examination I employed general anesthesia and this experience warrants me in making the statement that this method ought to be always adopted in these examinations—where we can obtain the consent of the patient. It enables us to examine the organ with perfect tranquillity and it is applicable in nearly all the cases

in which oesophagoscopy is not contra-indicated by the presence of certain organic changes. After these very short preparatory remarks, I shall proceed to give one case illustrative of each group that fell under my oesophagoscopic observation. The conditions that we find in cancer of the oesophagus are so nearly identical in their clinical aspect that it would appear useless to weary you with more than one history of each group.

A. H., 57 years old, German, family history unimportant. Claims to have enjoyed perfect health until three months ago when he had intermittent difficulties of deglutition with frequent vomiting immediately after ingestion. The intermission became shortened until patient was unable to swallow any food whatsoever. At present even liquid food is regurgitated and the act of deglutition is accompanied by severe pain in the presternal region. Patient states that he has lost 47 pounds in the period of three months.

Present condition:—Tall, emaciated, present weight 137 pounds. The results of the physical examination with the exception of that referring to the oesophagus is uninteresting. The second deglutition sound was absent. A tumor or aneurism pressing from without were excluded.

The introduction of the oesophageal bougie shows an obstruction at a distance of 32 c. m. from the incisors. The oesophagoscopic illumination reveals at the same distance a sharp edge in the anterior wall which seems to lie on top of an ulceration; posteriorly the transition of normal into diseased tissue is less sharply defined. A little piece of tissue projecting into the lumen of the oesophagus was excised and handed to the pathologist whose report I append:

Specimen:—Tissue from oesophagus.

Findings:—The microscopic examination shows a carcinoma involving a mucous membrane surface. There is so little of the surface epithelium (stratified squamous type) present, that it is difficult to definitely determine any epithelial ingrowth. In the tissue beneath the basement membrane there are many nests of epithelial cells that

¹Read before the Medical Society of Greater N. Y., (Brooklyn) March 2nd, 1908.

have an arrangement quite closely approximating typical epithelial pearls. About these and deeper in the structure are many groups of carcinoma cells in an alveolar like arrangement. Dexter."

Patient died within nine days after his call at my office from a severe hemorrhage. No autopsy.

CASE II:—J. S. A., 49 years old, farmer; parents healthy. Ordinary diseases of childhood. Typhoid fever when 9 years of age. Eighteen years ago difficulty in swallowing appeared suddenly after the patient had tried to lift and break a heavy stone. A day after this he noticed the pressure of piles. Two weeks later he again experienced dysphagia both in eating solid and liquid food, with a sensation of an obstruction in the lower part of the oesophagus. In one or two minutes after ingestion the food was regurgitated with the result of affording the patient perfect relief. This occurred with every attempt at swallowing; sweetened water of a moderate temperature would glide down best. Some time later the food remained down giving the distinct sensation of not being in the stomach and causing a feeling of great discomfort that started in the epigastrium and radiated towards both sides of upper chest. At present he is able to take a fair amount of food. His sleep was greatly disturbed by spells of coughing, and vomiting of the food last taken. There was marked odor from his mouth which became particularly pronounced during the night. Was treated for three years for cardiospasm without any beneficial result, then for a supposed growth of the oesophagus. At present he chews the food again after regurgitation and if he makes a determined effort to press the food downwards he thinks he succeeds in pushing it down into the stomach. Has no cough excepting that accompanying the act of regurgitation. Appetite fairly good save when he works too hard. Bowels fairly regular, no difficulty in micturition. Lost twelve pounds since the beginning of his illness. His present weight is 140 pounds; 5 ft., 6 in. in height, fairly well nourished.

Examination of thoracic, circulatory and abdominal organs negative. Second deglutition sound delayed. The stomach tube which meets with obstruction at the level of 32 c. m. moves with great facility after

the impediment is overcome. At this examination there is a discharge of large masses of food and mucus. In the food ejected I found some pieces of ham which the patient claims to have eaten a week ago. The oesophagus is washed out (the exact quantity of the material obtained is not revealed in my notes) and the oesophagoscopic tube introduced without any difficulty. When at 28 c. m. from the incisors I lost sight of the oesophageal wall and looked into what appeared a large dark cavity. In going further down some large folds of mucous membrane obstructed the tube completely so that I was forced to desist after reaching the level of 32 c. m. The material obtained from the oesophagus contained no free HCL, nor lactic acid. The gastric contents obtained by the stomach tube contained 10 HCL, and were fairly well digested. Lactic acid 30.

When I saw the patient again two months later he informed me that he had been able to swallow much better for two days after the introduction of the tube; subsequently to this the old condition returned. Oesophogoscopic examination shows the same picture. In a letter which I received six months later the patient informed me that he felt better as long as he adhered to the prescribed diet. Every indiscretion was followed by a sure return of his former symptoms. The only interesting question in the case is the possible connection of traumatism with the production of idiopathic dilatation of the oesophagus.

CASE III:—F. G., 48 years old. Married. One brother died of tuberculosis. For the last twenty-five years he has been suffering from alcoholic gastritis, with frequent morning vomiting. Seven weeks ago noticed difficulty in swallowing solid food, which extended later to semisolid food. There is no difficulty in swallowing liquids. Has pain in the act of deglutition which he refers to the cardiac orifice. Lost in weight and strength. Appetite good, bowels constipated. The physical examination shows nothing of any importance. The soft tube meets with a resistance at the distance of 38 c. m. The oesophagoscopic examination shows a non-ulcerating grayish tumor occupying the whole wall in a circular arrangement. A small piece is excised and the pathologist reports non-malignant possibly syphilitic. This diagnosis was

based upon the fact that the pathologist found granulation tissue which had undergone in parts a fatty metamorphosis. The very energetic antisyphilitic treatment produced a decided improvement so that patient was comfortable when he limited himself to a semiliquid diet. A year after his examination by me the patient succumbed to an acute pneumonia.

I desire to remark here parenthetically that another patient, T. M., whose oesophagoscopic findings were nearly identical was also subjected to specific treatment. In this instance the benefit was but temporary and the patient succumbed half a year later to the influence of his oesophageal stenosis.

The last case that I desire to present is that of a foreign body in the oesophagus. A young lady had swallowed a large piece of a partridge which remained in the thoracic part of the oesophagus, and gave rise to attacks of dyspnea and to pain. I saw the patient about three hours after this event had happened. Introduced first the stomach tube and withdrew with this a piece of meat and a bone together about two inches in length. As the patient still complained of the pressure of a foreign body, in spite of the fact that the tube passed into the stomach without any difficulty, and in spite of a normal second deglutition sound, I suspected that some other part of the partridge might have become pressed against the oesophageal wall, so as to offer an obstacle to my tube. I therefore introduced the oesophagoscope but found the entire lumen of the organ absolutely free. In spite of this the patient, a highly neurotic individual, continued to complain of a sense of obstruction and was seen by a laryngologist who withdrew something with a probang. When I asked that gentleman concerning the nature of what he obtained he replied that he had taken out some grist.

I have to refrain from giving you a very interesting history of a diverticulum because I did not succeed in introducing the oesophagoscope. The tube produced such a decided pressure upon the trachea that the patient became completely cyanosed compelling us to desist from further efforts.

Another case that of a mediastinal abscess following a perforation of the oesophagus, through the instrumentality of a foreign body, must be also excluded as the introduction of the tube was unnecessary and would have been undoubtedly dangerous at the time when the patient was seen by me. Incidentally I beg to observe that the patient was cured.

It is doubtful if the small number of my observations entitles me to form any conclusions as to the value of oesophagoscopy. I have but twelve recorded cases, which small number is caused by the fact that I kept no record of the normal cases inspected, nor any accurate notes of all the cases referred to me by other physicians. Some cases were also contained in dispensary records, part of which were lost. I should, therefore, beg of you not to consider my deduction in the light of a general statement but simply as the expression of my personal opinion. This would be in the direction of not attaching too much value to the diagnostic significance of the oesophagoscopic inspection. In malignant growths the diagnosis can usually be made by other methods; the differential diagnosis between diverticulum and dilatation can also be arrived at by other means.

In the extraction of foreign bodies the oesophagoscope is undoubtedly far superior to the method of probing in the dark with the possible danger of causing dire mischief, or even to the removal by the aid of X-rays, which, of course, are not applicable to all foreign bodies. Here the oesophagoscope is the only rational instrument which ought to be considered as indispensable as the bronchoscope is in the removal of foreign bodies in the respiratory tract.

If I succeeded in establishing the diagnosis of syphilis in one instance the value

of the discovery is not to be exaggerated as we would probably always be inclined to institute an antisyphilitic treatment in hopeless cases of supposed oesophageal cancer.

The scientific value of the oesophagoscope is not impaired by my remarks which refer entirely to its clinical importance.

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RECENT LITERATURE ON DERMATOLOGY.

BY

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SYPHILIS INSONTIUM:—Although thousands of cases of innocently acquired chancre have been reported, yet frequent reports should be reminders for prevention and recognition. Three recent papers on this subject have been selected for abstract. Washburn (*Jour. Cut. Dis.*, July, 1907) records six very interesting cases of extragenital chancre; three in males, between thirty and fifty-eight years of age, and three in females, between nineteen and thirty. The chancre developed on the right tonsil in two cases, on the left tonsil in one case, just above the right breast in another, on the gum in the fifth case, and on the lower lip in the last. Kingsbury (*Jour. Cut. Dis.*, August, 1907) also describes a typical case of extragenital chancre of the left cheek, in a male of twenty-two years. All the concomitant signs of secondary syphilis were present. Swinburne (*Jour. Cut. Dis.*, October, 1907) records in his article six cases of innocently acquired syphilis and also the history of a patient reinfected with the disease. Authentic second attacks of syphilis are exceedingly rare, and until recently were thought not to occur. This latter patient, a male of twenty-eight, apparently had competent observers during both attacks of syphilis. The chancre in each attack was

located on the penis. The second outbreak occurred seven years after the first, and in each all the concomitant signs of syphilis were present; pharyngitis, general adenopathies, alopecia, muscular and osseous pains, general macular eruption, and mucous patches. Three of these innocently acquired scleroses were noted on the tonsils, on the left in one case, and not specified in two; on the tip of the tongue in another; on the lip in the fifth case; and in the last, two chancres were situated on the lower lip. These thirteen cases make a very interesting series; with six infections of the tonsils, three of the lip, one of the tongue, one of the gum, one of the cheek, and one of the breast. The source of contagion was, in two cases bites by infected individuals; kissing was causal in four cases; a dental instrument was the origin of another; a tin cup with a ragged edge was the infecting agent in one case; the nozzle on a lung testing instrument was the infective origin of another; unnatural practices caused one of the tonsillar chancres; while in four of the cases no suggestion as to causation was obtainable.

LEUCOPLAKIA:—This condition in an extensive form is decidedly unusual. The tongue is the site involved, alone or in combination, in almost every case. The male sex is the one almost invariably attacked, and usually after middle life. Dr. Hartzell's paper (*Med. Record*, February, 9, 1907) on this subject is most instructive. He describes an extensive case of leucoplakia, involving the entire mucous membrane of the lips, the tongue, and the cheeks. The patient was a girl of eleven, and her parents had noted this condition for some years. The patient had been brought for a roughness of the skin, a keratosis, chiefly of the back and neck. Fifteen years after the first treatment, at the age of twenty-six,

these keratotic patches on the tongue were noted to be ulcerated. A small wart-like nodule was also seen on the left side of the tongue. This nodule on microscopic examination was found to be an epithelioma. The interesting points in this paper are; the youthful age of the patient, both for the developing of leucoplakia and of epithelioma; the fact that the disease originated in a female; and the unfortunately fatal termination. The patient dying only twenty-four hours after the operation, supposedly from a pulmonary embolism. It is to be remembered that epithelioma not infrequently develop from leucoplakic patches.

LUPUS VULGARIS TREATED BY RADIO-THERAPY AND ACTINOTHERAPY:—Lupus vulgaris is seen infrequently in the United States, out of a total of 60,564 cases of skin diseases, tabulated by the American Dermatological Society, for the two years, 1904 and 1905, this tuberculosis of the skin occurred but 159 times. In Great Britain and on the Continent the disease is of frequent occurrence. Females are attacked in almost two-thirds of the cases, and under the age of puberty. Wills in a recent paper (*Bristol Medico-Chirurgical Journal*, June, 1907) records the result of treating eighty cases of lupus vulgaris with Roentgen rays, and the Finsen light. These cases were treated during the five years, December, 1901 to December, 1905. Wills divides these cases into various types; the erythematous, nodular, hypertrophic, ulcerative, verrucous, oedematous, and the sclerodermic. As lupus vulgaris is a true tuberculosis of the skin, it seems strange that internal complications are not more frequently associated with the cutaneous condition. Chronic fibroid phthisis was present in three of the patients. Tubercular dactylitis was recorded in three other cases. Hip-disease, in a chronic form was noted in one

case. Several of the patients had enlarged glands. The following conclusions were drawn in the paper; that for the most part better results are obtained with the Roentgen rays than with the Finsen light; that the X-rays are better for the hypertrophic, ulcerated, verrucous, and the sclerodermic forms; and the Finsen light is the better in treating the nodular type. Wills' analysis of the eighty cases of lupus vulgaris is as follows:—

1. Patients in whom spots have been relieved, with no recurrence in situ; though lupus may be present in the mucous membranes, or on other parts of the body. 20-25 per cent.
2. Patients discharged with great improvements. 15-18.75 per cent.
3. Discharged with some improvement (ulcerations healed, etc.) 9-11.25 per cent.
4. Improved, still under treatment. 11-13.75 per cent.
5. Ceased treatment prematurely. 8-10 per cent.
6. No improvement. 6-7.5 per cent.
7. Recurrence after apparent relief. 3-3.75 per cent.
8. Fresh development in vicinity of a healed patch. 2-2.5 per cent.
9. Dead. 6-7.5 per cent.

This table of results shows that although radio- and actinotherapy are important agents in the treatment of lupus vulgaris, yet it is to be hoped that some method more rapid, permanent, and efficacious in more cases may be found.

LUPUS VULGARIS TREATED BY RADIO-THERAPY, ACTINOTHERAPY, AND CAUSTICS:—Tomkinson (*Brit. Med. Jour.*, June 29, 1907) recently has reported three cases of lupus vulgaris treated by the Roentgen rays, the Finsen light, and the caustic method. The face was the site involved in all of the cases; the mucous membrane

of the nose being attacked in one. The Finsen light was the first therapeutic measure attempted, after a few weeks trial the X-rays was either combined with, or superseded this method. Pure lactic acid was applied, daily, to the mucous membrane involved. In one case the ray and the light treatment were stopped, and strong salicylic acid was applied to remove the diseased tissue. Ichthyol ointment was then applied to allay the irritation. After the subsidence of the inflammation from the salicylic acid method, eighty per cent. phenol, in absolute alcohol was applied. Great improvement was noted in these three cases.

—LUPUS VULGARIS TREATED BY CAUSTICS:—An apparently successful, but an extremely painful method of treating this disease is described by Dreuw (*The Lancet*, July 13, 1907) in a recent publication. The lupus patch to be treated is first frozen by ethyl chloride, or for a deep effect carbonic acid gas is used, until it is snow-white. Crude hydrochloric acid is then rubbed thoroughly over the surface, with a certain degree of force; Unna saturates this acid with chlorine. It is rubbed on the frozen surface until the nodules become grayish-white in color; being applied on a wooden stick, the size of a pen-holder, wrapped in cotton-wool. In treating the nasal cavities the tuberculous tissue is scraped away with a curette, the bleeding being staunched with adrenalin; the posterior nares should be previously packed. If the pain of this operation be too severe, an anaesthetic should be administered. The after treatment of these cauterized areas consists of thorough dusting with a condensation product of guaiacol and formalin. After a few days a combination of zinc and sulphur pastes may be applied. In treating isolated deep-seated nodules, the area is first frozen, a small pointed wooden stick is bored into

the nodule, and a few drops of pure hydrochloric acid are run into the opening through a pointed glass tube. A histopathological examination of several of these cases, shows that twelve weeks after using this method, the lupus tissue had been replaced by scar tissue, and no tuberculous areas remained. Four of the cases treated by this method have been under observation for two years without recurrence.

RADIUM IN THE TREATMENT OF SKIN DISEASES:—Ever since radium was discovered by Professor Curie a few years ago, dermatologists have been extremely interested in its local action. Unfortunately the cost of a sufficient quantity to produce the result desired has been almost prohibitive. Recent research has brought radium in a more convenient form for application, and it is to be hoped that the cost finally will be somewhat reduced. A laboratory has recently been opened in Paris, under the charge of Wickham (*The Canadian Practitioner and Review*, September, 1907) for the physical, chemical, physiological, and experimental study of radium. Several minerals have been used for the extraction of radium; pechblende, carnotite, thorianite, autunite, and pyromorphite. The radium obtained from these minerals appears in the form of radioferous, soluble and insoluble salts. It is disseminated in a strong, enduring varnish, that is poured over a sheet of metal, to which has been given the shape and dimension desired. The apparatus is shaped according to the surface to be treated; flat, round, square, spherical, or cylindrical. Radium varnish may be placed on specially prepared applicators, to reach small, deep-seated cavities. Three sets of rays irradiate from this radium varnish; the superficial, more deeply penetrating, and those of the deepest penetration. If the superficial action is desired, the radium

varnish is applied directly to the part to be treated; if the superficial surface is to be protected, a thin layer of aluminum is interposed between the radium varnish and the lesion to be treated, thus cutting off the superficial rays and giving the two penetrating sets of rays full action. If only the deepest action is desired, a still thicker sheet of aluminum is interposed; thus preventing the penetration of any rays, excepting those with the deepest radiation. It is of course necessary to protect the surrounding parts, so that the radium will only act on the lesion being treated. This therapy has been used successfully in various chronic, squamous, and ulcerative diseases of the skin. The greatest success has been noted however in the treatment of epitheliomata, vascular naevi, and of obstinate pruriginous eczemas.

LIQUID AIR THERAPY IN SKIN DISEASES:—Two papers have recently appeared on this subject, by Whitehouse (*Jour. Amer. Med. Assoc.*, Aug. 3, 1907), and by Trimble (*Jour. Cut. Dis.*, Sept., 1907). Liquid air apparently has no bactericidal action but acts on the cellular metabolism. Upon applying this therapeutic measure, the blood vessels are contracted to the highest degree; an intense inflammatory reaction then ensues, causing a flooding of the lymph spaces with serous exudate. This serous flooding is supposed to be the curative step in cutaneous cancer. According to Whitehouse the elements governing the effect produced by the liquid air are: the degree of saturation, the accuracy of contact, the amount of pressure exerted, and the duration of the exposure. It may be applied as a spray, but the cotton swab method is probably preferable. The more pressure used and the longer the application, the greater is the inflammatory reaction and the larger is the scar. In

lupus erythematosus and in port-wine mark the best result is produced by a short application, with light pressure. In pigmented and hairy naevi, in angiomata, lymphangiomata, and in lupus vulgaris a medium pressure is indicated. In treating the individual nodules in lupus vulgaris deep pressure with the pointed applicator is required. Deep pressure is also demanded in the cure of the epitheliomata, particularly those of the rodent ulcer type. A second application of liquid air should not be attempted, until the inflammatory reaction from the first has subsided. Whitehouse after describing his method of procedure, records the result obtained in treating four cases of pigmented naevi, three of vascular naevi, two of erythematous lupus, two also with lupus vulgaris, and fifteen cases of epithelioma. The results were uniformly good in all of these cases. Trimble records in his paper, the notes on eight cases of pigmented, hairy naevi treated by the liquid air method. The treatment was successful in each case, and no recurrences have occurred. There are unfortunately several drawbacks in the use of liquid air therapy: the evanescent character of the fluid, the difficulty in obtaining the same, and the expense involved.

Depilatory for Use before Surgical Operations.—In the *Journal de Médecine et de Chirurgie Pratiques* a formula is given for preparing a depilatory for use before operations. It consists of sodium monosulphide, 1 part; calcium oxide, 1 part; starch, 2 parts; and sufficient water to form a stiff paste. The longer hairs are removed with scissors and then, after washing the patient thoroughly, the paste is spread in a uniform layer with a spatula. After five minutes the paste is removed by means of a sterile swab of cotton and the skin is washed freely with sterile water to remove the alkali.—*The London Lancet*.

ETIOLOGY AND DIAGNOSIS.

Ladinski's Sign in the Early Diagnosis of Pregnancy.¹—Ladinski thus describes an early sign of pregnancy—"Frequently as early as the fifth week, but always in the sixth week, there can be felt in the median line in the anterior wall of the body of the uterus just above the junction of the body and cervix, in other words in the isthmus of the uterus, a circular area the size of the tip of the finger, which presents to the palpating finger the sensation of an elastic fluctuation.

"As pregnancy advances this area increases in size in a crescentic manner, until between the third and fourth month, when nearly the entire anterior body, with the exception of the upper crescent of the fundus, partakes of this change, and gives the cystic fluctuating feel to the examining finger. The change appears in the anterior wall of the uterus when the uterus is in the normal position or slightly anteverted, but in extremely retroverted or retroflexed uteri the elastic area appears in the posterior wall, but instead of being perceptible in the fifth or sixth week of pregnancy, is usually felt in the sixth or seventh week."

The Differential Diagnosis between Specific and Non-Specific Urethritis.²—

Wolbarst says that the various types of urethral inflammation are to be thought of whenever a patient presents himself with symptoms that are not typical of acute gonorrhea. In the typical cases the symptoms are so clearcut and unmistakable that the microscope should be used simply to confirm the diagnosis.

In the non-specific varieties of urethritis—that is, those which are not produced by the action of the Neisser gonococcus, the diagnosis is not usually very difficult to make if the possibility of their presence is not overlooked. In this classification are included those cases in which the inflammation is brought about by contact with menstrual or leucorrheal discharges, excessive and unusual sexual strain and irritant con-

ditions of the urine. Instrumentation and irritant injections are also exciting causes. Whether these exciting causes are capable of producing an inflammation in an otherwise healthy urethra, is still doubted by some writers; but there is no doubt that when the urethra is already the seat of a chronic inflammatory process, even of low grade, and even in the absence of gonococci, any of these factors is capable of causing a catarrhal inflammation which it is important to differentiate from the gonorrheal variety. These attacks seem to be most common among men who have the general catarrhal diathesis, and should properly be regarded as one of the manifestations of that condition. It should also be noted, in this connection, that where excessive sexual strain is ascribed as the cause of the inflammation, it will often if not always be found, that posterior urethra, as well as the anterior, is involved. In other words, we have to deal with a subacute congestion of the prostatic urethra.

In non-specific urethritis the period of incubation is usually of shorter duration than in the specific variety, and the disease is characterized throughout its entire course by less virulent symptoms than those of gonorrhea. There is a slight burning sensation on micturition, the meatus is slightly reddened and sometimes swollen, and a whitish secretion, in which the gonococci are never found, can be squeezed from the urethra. This is in sharp contrast to the virulent-looking secretion which is seen in the specific variety, though in some cases the discharge may be quite profuse. The course of the disease is not only milder in every way, but the duration is considerably less than that in true gonorrhea, and it is quite certain that many of the reports of wonderfully quick cures of so-called gonorrhea were actually, though unknowingly, dealing with these simple or non-specific varieties. There are exceptional cases, however, in which the symptoms and course of the disease so closely resemble the gonorrheal variety that the diagnosis can only be made after fruitless and repeated search for the gonococci. These cases may run an exceedingly obstinate course, in spite of all and any treatment, or perhaps because of it, and occasionally a condition of sexual neurasthenia may follow.

¹ Charlotte Medical Journal.

² A. L. Wolbarst, M. D., Int. Jour. of Surgery, March, '08.

Intracapsular Fracture of Femur.—In intracapsular fracture of the femur there is usually shortening to the extent of from half an inch to an inch; but in some cases no shortening can be detected.—*Da Costa.*

Extracapsular Fracture of the Femur.—In extracapsular fracture of the femur there is severe pain, pressure upon the great trochanter is very painful, swelling and ecchymosis are marked; there is absolute inability on the part of the patient to move the limb and passive movements cause violent pain; there is shortening to the extent of at least one and one-half inches, and sometimes to the extent of three inches.—*Da Costa.*

Fractures in Young Children.—In the fractures of young children do not look too much for crepitus. These fractures are apt to be on the line of union with an epiphyseal cartilage, and no crepitus can be evolved without the use of an unjustifiable amount of force.

Differential Diagnosis of Tinea, Chloasma and Leucoderma.—Tinea versicolor, chloasma, and leucoderma are often confounded. Tinea versicolor, or the so-called liver spots, is due to the presence of the vegetable parasite *Microsporon furfur*. It appears as yellowish brown spots, irregular in shape, which may spread over the entire body. They are found chiefly on the trunk, although the neck and flexor surfaces may be affected. The pruritus is moderate. If the disease is not treated it may last an entire lifetime. If tincture of iodine is applied to the tinea it stains the spores a mahogany brown.

Chloasma is due to an increase of the normal pigment. It may be found along the forehead, cheek, angle of the eyelids, upper lip, and cheek, and is of a dark brown color. There are no subjective symptoms.

In leucoderma there is an entire absence of pigment. It appears as one or more white spots on a level with the surrounding skin. There is no scaling. The spots, which are sharply outlined, are surrounded by an abnormally dark pigment, which gradually fades into the healthy skin.—*Cocks.*

TREATMENT.

The Surgical Treatment of Impotency.¹—In general the surgical measures of relief may be divided according to Lydston into:

(a) Operations for the relief of deformities—mechanical impedimenta, or such conditions as varicocele—which act detrimentally upon the patient's mind and also derange the circulation of the sexual organs.

(b) Ligation or resection of the vasa deferentia for the purpose of putting the prostatic urethra, seminal vesicles, at rest, thus lessening sexual reflexes; and further, in some cases, to stop frequent nocturnal pollutions. This cutting off of the seminal circulation need be only temporary. I have devised a systematic method rejoining the severed ends of the vas which forms a perfect anastomosis, and which can be performed at any time the surgeon may elect.

(c) Ligation, or better, resection of the vena dorsalis penis. When properly done this operation is successful in a fair proportion of cases. It acts in two ways, viz.: (1) by increasing the circulation of the penis, and (2) obviously by its psychologic effect. The circulatory effect of the operation is easily demonstrable—the psychic effect may be inferred. Naturally, an immediate increase in the bulk of the penis with more frequent and vigorous erections, arouses the patient's confidence in his sexual capacity. The operation should be carefully done and the patient put to bed for a few days. It should be remembered that ligation or resection of the dorsal cutaneous vein is not ligation or resection of the dorsal vein of the penis. The latter is a delicate operation and requires skill and anatomic knowledge for its proper performance. The dorsal vein lies within the fascia propria of the penis. The veriest tyro can ligate the cutaneous veins.

(d) Perineourethrotomy and dilation of the prostatic urethra. This offers relief from such underlying conditions as hyperesthesia of the deep urethra, stricture and infected posterior urethra and prostate. This operation is in my opinion performed for the relief of impotency less often than it should be.

¹ G. Frank Lydston, M. D., Am. Jour. of Clin. Med., April, '08, p. 497.

Whatever surgical measure is undertaken for the relief of impotency, too much should not be promised. Care, however, should be taken not to give the patient a gloomy view of his case. The psychic aspect of the case should always be borne in mind.

The Treatment of Peritonitis.¹—McGuire describes the practical steps of the Fowler-Murphy method as follows: Open the abdomen over the seat of the primary focus of infection and correct the trouble, whatever it may be, so as to prevent the admission of further poison. Make a second short incision immediately above the pubes, and insert a large rubber drain to the bottom of the pelvis. The work should be rapid, with as little manipulation of the viscera as possible, and no effort should be made to remove the pus by sponging or irrigation. Place the patient in bed in an exaggerated Fowler's position. Give saline solution by continuous low-pressure rectal irrigation; administer morphia, in small doses, for pain and spartein, in large doses, as a general stimulant and prophylactic against suppression of urine. Purgatives should not be employed, but bowel action secured by the use of enemata. If there is much nausea or vomiting the stomach should be thoroughly irrigated and no food should be given until the patient can retain and assimilate it.

By the adoption of the method outlined McGuire has seen a great change in his mortality. A recent analysis of the last 500 cases of appendicitis operated on in his private hospital gives a record of twenty-four patients with diffuse suppurative peritonitis. The first six were treated by the old method of irrigation and multiple drainage, with five deaths. The last eighteen were treated by the Fowler-Murphy method, with but one death.

The Palliative Treatment of Spina Bifida.²—In a notable lecture on the Surgery of the Spinal Cord and Its Membranes, Armour says that palliative treatment of spina bifida is indicated in all cases unsuitable for operation, either from the

variety of the tumor or any condition of the sac, such as ulceration. It may be also used as a temporary measure in cases unsuitable for immediate operation on account of the age or general condition of the patient, or where the coverings of the sac are septic and time is desired to get them clean. It consists of protection of the tumor from injury and the prevention or lessening of septic infection. This is obtained by some form of shield, made of perforated celluloid or aluminum, accurately fitted over the tumor and fixed by strapping round its margin to prevent it shifting its position. A broad abdominal belt should also be applied. Great care must be taken to prevent soiling of the tumor by feces, especially when situated low down. If ulceration is present treatment by antiseptic dressing should be persevered with to try to get healing.

Treatment by injection into the sac of an iodo-glycerine solution, usually known as Morton's fluid from the name of its introducer, is the only other treatment besides excision which will be referred to. Morton reported 80 per cent. of cures by his method. The committee of the Clinical Society reported upon 71 cases treated by this method. Of these 35 (49 per cent.) were cured, 4 improved (5.4 per cent.), 5 not improved (7 per cent.), and 27 deaths (38 per cent.). The great objection to the use of this method is the impossibility, already referred to, of telling what variety of spina bifida is present in any particular case; or, in other words, whether the sac does or does not contain the cord and nerve roots. That myelo-cystoceles are more common than heretofore stated, and are frequently mistaken for simple meningoceles, has been shown by Hildebrand and Muscatello.

Opiates After Operation.¹—Pain is the one symptom common to all patients after an operation, and demands constant consideration according to Moore. As already suggested, much can be done in the way of prevention, but after that our sheet-anchor is opium in some of its various forms. Morphia administered hypodermatically is the universal favorite. Codeia and other milder preparations are disap-

¹ Stuart McGuire, M. D., *Jour. of A. M. A.*, March 28, '08, p. 1021.

² Donald J. Armour, F. R. C. S., Eng., London *Lancet*, March 7, '08, p. 693.

¹ J. E. Moore, M. D. *Surg. Gynecology and Obstetrics*, March, '08.

pointing and should only be used where the patient is known to have a marked idiosyncrasy against morphia. When morphia is indicated, it should be given in full doses—usually one-fourth of a grain—because a smaller dose does not have the desired effect and is just as liable to be followed by unpleasant effects as a large one. It is our mission on earth to relieve pain, and in post-operative treatment we have a great opportunity. One who denies his patients an opiate after an operation, on theoretical grounds, is in error, and would very quickly change his views were he the patient. At one time I, in common with most surgeons, denied my patients opiates after abdominal operations, on the theory that they caused gas and consequently greater suffering. My patients differed from me at the time and censured me afterwards, and after long experience I am thoroughly convinced that they were right. All patients have some discomfort from gas after the abdomen has been opened, but my patients have infinitely less suffering now than they did when I denied them this boon. Some able surgeons of large experience are now giving a hypodermic of morphia to these patients before they recover from the anæsthetic, as a routine, and while I have not yet adopted the routine, I am inclined to believe that this will eventually be the accepted practice. As long as the hypodermic syringe is kept in the hands of the nurse, and its use discontinued when the surgeon decides that it is no longer needed, any fears of establishing a habit, are only theoretical. Post-anæsthetic vomiting is not a contra-indication for the hypodermic, but, on the contrary, it is often helpful in this condition.

DIETETICS AND HYGIENE.

Rice as A Muscle Maker. — A recent editorial in the *Lancet-Clinic* (Cincinnati) is devoted to this interesting subject. It points out that the defeat of Russia by Japan drew the attention of the whole world to the power of endurance exhibited by the Japanese, and that much surprise was expressed that a rice-eating nation should develop such remarkable physical power. One of the factors to be taken into account says the writer is the frugal, abstemious habits

of all Japanese families, but it is quite possible that rice plays a more important part in the matter than is generally realized.

In the United States as well as in Europe, rice has usually been considered an inferior food, owing to the excess of starch in its composition, and this is undoubtedly true of rice as we meet with it. But this defect in the grain is the result of the removal of nutrient matter for the purpose of making it presentable for the market by what is known as the "polishing" process. Not only is the outer husk taken off, but what is called the "rice meal," which envelops the inner kernel, is also brushed away, although it is highly nutritious, being the albuminous portion of the grain. It is, however, an unattractive brown in color. This rice-meal is exported to Europe by rice-growing countries, and in England it is made into what is named "oil cake," with which cattle are fattened. Chemical analysis of rice-meal shows that it contains about 12½ per cent. of albuminoids and 4½ per cent. of phosphoric acid, and the former appears to be easily digested and utilized by the human system.

As the Japanese, in common with other rice-eating nations, do not "polish" the grain, except for export, they retain a large proportion of nutriment and flavor to which virtually all Americans and Europeans are absolute strangers.

It is remarkable that the most highly civilized nations are willing to sacrifice nourishment to appearance when all the facts are quite well known. White rice, no doubt, looks nice because we are accustomed to its delicate appearance. Being purely carbohydrate (starch), it is not a muscle-builder. When eaten in its natural condition, that is, without being "polished," rice is a food that will build up the body and will create force and energy as well. Had the Japanese "polished" their rice, without substituting other albuminous food, there can be no doubt that the Russians would have defeated them, because men cannot thrive upon starchy foods which contain no albumen to repair the waste caused by the very act of living, and by daily work.

Man's efforts to improve upon Nature's product by removing the most valuable part of the rice-grains must be regarded as a serious error.

GENERAL TOPICS.

When Should Patients Get Out of Bed After Operation?¹— Moore says in every case the question naturally arises, when shall the patient get out of bed? All agree that old people should get up at the very earliest period possible, for reasons well understood, but there is still a great diversity of opinion as to when a younger patient should get up. A few years ago we kept patients in bed longer than we do now, but we found that, instead of shortening convalescence, it lengthened it. The tendency now is for the pendulum to swing too far the other way, for many patients have had their convalescence unduly prolonged through efforts to get them out of bed too soon. It is not well to establish fixed rules in this matter. It is far better to allow each patient to be a law unto himself. With foolish patients, the surgeon must be arbitrary and settle the question in accordance with his judgment, but sensible patients can often be consulted in this matter to advantage. The average patient may be allowed to get up as soon as he can do so comfortably.

Every abdominal operation is of sufficient importance to justify the patient in remaining in bed for from one to three weeks, owing to circumstances, and he is usually content to do so. There is no crying need for getting a patient out of bed the day after an abdominal operation. He is safer and more comfortable in bed for a few days at least. I recently operated upon a colleague for chronic appendicitis, who made the statement that he intended to get out of bed the day after operation: that staying in bed for a week after such a simple operation was all nonsense, to all of which I readily acceded, with a mental reservation. On the first day he quietly curled up on his side, and I smiled without comment. On the second day he was still in bed, and when I asked him why he was not up, he mildly suggested that I go to a warmer climate, and very emphatically stated that his viewpoint had changed.

¹ James E. Moore, M. D., Surg. Gynecology and Obstetrics, March, 1908, p. 281.

The Value of Independent Thought.¹—

To the young men in the profession, those who are at the beginning of life's journey, while I am now near its close, I would say: "Be not like dumb driven cattle."

Be *men*, think, judge, act for yourself, cultivate a habit of independent thought and investigation, guided but not controlled by the study and investigation of the learned men of the profession, jealously preserve and protect your independence, be ever open and ready to receive knowledge regardless as to the source of such knowledge; many valuable truths have come from very humble sources. Take for your motto the words of Thomas à Kempis, who said, "mark not who said this or that, but mark the words spoken." Into your keeping, sooner or later will rest the honor and integrity of our noble profession, make yourselves worthy of the trust, no man can carry your burden. On your shoulders alone it must rest and you alone will be held accountable to God and your fellow man for the life you lead. Rest assured you will find it the part of wisdom to *think* for yourselves. Study closely the different theories advanced and judge them on *their* merit *not* on the merit or reputation of the man who advances them.

Progress in the Council on Pharmacy.²—

At its meeting in February, 1908, the Board of Trustees of the American Medical Association was requested by the Council on Pharmacy and Chemistry to appoint a body of clinicians to whom could be referred questions relating to therapeutics. In its communication to the Board the Council stated that in the course of its work the subcommittees had frequently encountered questions, a solution of which required the experience and opinions of clinical therapist. The suggestion of the Council was agreed to, and fifteen physicians and surgeons, all in active practice in various parts of the United States were elected as the staff of clinical consultants. This is the wisest and strongest move that has been made in connection with the Council. It will strengthen the confidence of the profes-

¹ H. C. Buck, M. D., Charlotte Med. Jour., March, 1908.

² Jour. of So. Carolina Med. Asso., Apr., '08.

sion at large as well as the pharmaceutical houses in the findings of the Council, whose efficiency will thereby be greatly increased. Why this step was not taken before by the Board of Trustees we have never been able to determine, and none of them has ever taken us into his or their confidence in regard to the matter. It is undoubtedly true that to many intelligent, high-toned and independent physicians it is distasteful and distinctly objectionable to be dictated to by a committee of pharmacists and chemists as to what drugs or remedies they could or could not ethically prescribe. The appointment of the fifteen eminent practitioners as clinical consultants entirely eliminates this objection, and we believe this action marks a long step forward in the progress of the Council.

ANNOUNCEMENT.

Beginning in the May number, AMERICAN MEDICINE will establish a new Department of Pharmaceutical Remedies, in which will appear as rapidly as possible in every succeeding issue an honest impartial description of the leading pharmaceutical preparations. These descriptions will be unprejudiced, and while in every respect fair to the product discussed, *will aim first, last and always to give useful, practical and absolutely truthful information to the medical profession.*

Special claims of manufacturers will be given the most careful attention, and these will be *disproved* or *substantiated* by the most thorough chemical and clinical tests by competent investigators. At considerable expense arrangements have been made with a prominent firm of analytical chemists for all desirable or necessary examinations and analyses. Questions of subscribers in regard to active ingredients, pharmacology, physiological action and pharmaceutical therapeutics will be answered in this department, and correspondence on these matters will be welcomed.

Nothing but absolute fairness is pledged to individual interests, and while the rights of all will be carefully safeguarded, the one great object is for AMERICAN MEDICINE to add its share in the development of clinical therapeutics. Broader knowledge,

greater accuracy and a just appreciation of the good as well as the evil in modern pharmaceuticals cannot fail to contribute to the success that every physician is earnestly seeking.

All communications relative to scientific investigations, drug researches, etc., should be addressed to the Scientific Department of AMERICAN MEDICINE, 84 William Street, New York City.

NEWS ITEMS.

The 5th Pan-American Medical Congress.—The 5th Pan-American Medical Congress will be held in Guatemala City, Guatemala, August 5th, 6th, 7th, 8th, 9th and 10th, 1908. The Executive Committee have announced the following subjects as having been chosen for the general discussions:

GENERAL MEDICINE.

Tropical anaemias.

The present cause and treatment of cancer.

SURGERY.

Prostatectomy—Operations for repairing the ureters.

HYGIENE AND DEMOGRAPHY.

Should the segregation of lepers be enforced?
Demographic distribution of tuberculosis in America.

MENTAL AND NERVOUS DISEASES.

Classification of mental diseases.

A discussion of dementia precox.

INTERNAL MEDICINES.

Tropical diseases the character and causes of which have not yet been determined.

Ankylostoma.

GYNECOLOGY.

Can metritis be considered as a predisposing cause of cancer of the uterus?

The best means of keeping the uterus in position in cases of prolapse.

MILITARY SANITATION.

First aid to the injured on the battlefield and organization of an advance guard to render assistance.

The hygienic equipment of the soldier.

The supply of drink water in ports; its distribution and the best way of preventing its contamination by insects.

SYPHILIS AND DERMATOLOGY.

Paresis and the locomotor ataxia syphilitic.

OPHTHALMOLOGY.

What is the best method of treating pigmentary retinitis that we have at present?

Discussion of trachoma.

OBSTETRICS.

Post partum hemorrhage in valvular lesions of the heart.

CHILDREN'S DISEASES.

Infantile meningitis.

MEDICO LEGAL.

Physical causes that attenuate or annul the responsibility.

Civil rights relative to people's mental condition.

LARYNGOLOGY AND RHINOLOGY.

Cause and treatment of rhinoscleroma.

DENTAL SURGERY.

Indications of extractions of teeth.

TROPICAL DISEASES.

Prophylaxis and treatment of yellow fever.

RADIOGRAPHY.

Exact methods used in radiography.

BACTERIOLOGY.

Bacteriological study of typhus fever.

Bacteriological study of rhinoscleroma.

Bacteriological study of leprosy.

Filaria sanguinis hominis in Central America.

Diseases that can be transmitted by mosquito bites.

MATERIA MEDICA.

Central American quinine.

Central American Sarsaparilla.

A study of the myroxylon pereirea tree in the botanical, chemical and statistical way.

The names of gentlemen desiring to take part in the discussions and to present papers can be sent to Dr. Azurdia, General Secretary, Guatemala or to Dr. Ramon Gutierrez, American secretary, 75 West 55th Street, New York.

The International Congress on Tuberculosis has offered prizes in varying amounts for work in tuberculosis. A prize of \$1,000 for the best evidence of effective work in the prevention or relief of tuberculosis by any voluntary association since the last Congress, in 1905; two gold medals and three silver medals will also be awarded.

One thousand dollars is offered for the best exhibit of an existing sanitarium for curable cases of tuberculosis among the working classes, two gold medals and three silver medals will also be awarded.

One thousand dollars is offered for the best exhibit of a furnished house for a family or group of families for the working class, devised against tuberculosis; two gold medals and three silver medals will also be awarded.

One thousand dollars is offered for the best exhibit of a dispensary or kindred institution for the treatment of tuberculosis poor; gold and silver medals likewise will be awarded.

One thousand dollars is offered for the best exhibit of a hospital for the treatment of advanced pulmonary tuberculosis; gold and silver medals also.

One hundred dollars each is offered for the best educational leaflet on tuberculosis submitted by (a) adults generally; (b) teachers;

(c) mothers; (d) indoor workers; (e) dairy farmers; (f) school children; (g) pictorial booklet for school children in primary grades and for the nursery.

Besides these prizes, gold and silver medals are offered for various work in tuberculosis, the details of which, as well as of the above, may be had through the Central Committee of the International Congress, which consists of the following individuals: Dr. Charles J. Hatfield, Philadelphia, Chairman; Dr. Thomas G. Ashton, Philadelphia, Secretary; Dr. Edward R. Baldwin, Saranac Lake; Dr. Sherman G. Bonney, Denver; Dr. John L. Dawson, Charleston, S. C.; Dr. H. B. Favill, Chicago; Dr. John B. Hawes, Boston; Dr. H. D. Holton, Brattleboro; Dr. E. C. Levy, Richmond, Va.; Dr. Charles L. Minor, Asheville, N. C.; Dr. Estes Nichols, Augusta, Me.; Dr. M. J. Rosenau, Washington; Dr. J. Madison Taylor, Philadelphia; Dr. Wm. S. Thayer, Baltimore, and Dr. Louis M. Warfield, St. Louis.

Section on Urology.—On February 18th there was originated a section on Urology in the St. Louis Medical Society with the following officers:

Bransford Lewis, M. D., Chairman.

E. A. Scharff, M. D., Vice-Chairman.

H. W. Lyon, M. D., Secretary and Treasurer.

O. L. Suggett, M. D., Editor.

LITERARY NOTES.

The first number of the *Archives of Internal Medicine*, a new periodical issued by the American Medical Association has made its appearance and it is altogether a notable addition to scientific medical literature. Following are the contributors to the February issue and the titles of their papers:

Peabody, F. W. The Diagnosis of Typhoid Fever by Cultures from the Blood of the Ear.

Edsall, D. L. The Bearing of Metabolism Studies on Clinical Medicine.

Ewing, J. Cancer Problems.

Hart, T. S. A Contribution to Our Knowledge of the Acetone Bodies, with a Clinical Method for the Quantitative Estimation of Diacetic Acid and Acetone.

Sweet, J. E., and Pemberton, R. Experimental Observations on Secretin, with Special Reference to Diabetes and Malnutrition.

Wells, H. G. The Present Status of Our Knowledge of the Chemistry of the Processes of Immunity.

Each contribution is commendable, but Dr. Edsall's article on Metabolism is one of the most noteworthy communications that has appeared recently in any medical publication or in any language. It is an earnest plea for exact investigations and the rational interpretation of the biochemic phenomena of the human organism. This paper deserves reading and re-reading by every physician who is alive to the really substantial progress that is being made in medical science today.

The Archives of Internal Medicine may never reach an enormous circulation but such a publication cannot fail to achieve a scientific utility and success compared to which business and financial success is "as tinkling brass or a sounding cymbal." The American Medical Association never did anything that redounded more to its credit or that went so far toward fulfilling its obligations to the medical profession of America. May it be but a forerunner of the constructive work yet to be done.

Dr. F. M. Pottenger, Professor of Clinical Medicine of the University of Southern California, is the author of a new and valuable work on "*The Diagnosis and Treatment of Pulmonary Tuberculosis*" recently published by William Wood & Company of New York. This highly commendable book on a subject of vital importance is of sufficient merit to be worthy of more than passing notice.

In the first place the book is of convenient size, with a very complete index and is nicely bound in cloth. The price is \$3.50 net. It is abundantly illustrated, containing several excellent cuts. The paper and printing are likewise good, and the typographical arrangement is especially commendable.

The different paragraphs treat in a comprehensive and intelligent manner the various important details of etiology, diagnosis, symptomology and treatment, and have indented black-face headings, so that reference to any particular subject is readily and easily accomplished.

Dr. Pottenger's style is certainly fluent and most interesting. Among the many good features of the text are the explanations of fundamental details and the author not only tells what the conditions are, and their predisposing factors, etc., but very rationally considers cause and effect.

The tuberculin test, composite signs and symptoms of each stage of pulmonary tuberculosis, as well as differential diagnosis, prognosis and the most important complications of this disease, are handled in a clear cut careful manner, which cannot fail to be of especial aid to the general practitioner who seeks the latest information.

The chapters on open-air treatment, diet, rest, exercise, as well as hydrotherapy and specific medication are given careful scientific consideration and are not only well up-to-date but form a most useful contribution to the therapy of tuberculosis.

Dr. Pottenger has made a valuable contribution to medical literature and he speaks from a vast and comprehensive experience. It is such books by such men that promise much for the immediate future of scientific medicine.

A revised second edition of *Medical Diagnosis* by Charles Lyman Greene, M. D., of St. Paul, is announced by its publishers, P. Blakiston's Son & Co., of Philadelphia. The first edition was sold out in less than one year. A remarkable attest to the scientific merit of the work lies in the fact of its very generous acceptance in great Britain, to which point five hundred copies have already been sent. *Medical Diagnosis* is one of Blakiston's famous leather-bound series of manuals.

BOOKS RECEIVED.

Disorders of Respiration and Circulation.—By PROF. EDMUND VON NEUSSER, Professor of the Second Medical Clinic, Vienna Associate Editor Nothnagel's Practice of Medicine. Authorized English Translation, by ANDREW MACFARLANE, Professor of Medical Jurisprudence and Physical Diagnosis, Albany Medical College, Part 1, Dyspnea and Cyanosis. Part 2, Bradycardia & Tachycardia, with Bibliography. Published by E. B. Treat & Co., New York.

The Blues (Splanchnic Neurasthenia) Causes and Cure.—By ALBERT ABRAMS, A. M., M. D. (Heidelberg) F. R. M. S. Consulting physician Denver National Hospital for Consumptives, the Mount Zion and French Hospital, San Francisco, Pred. of the Emanuel Sisterhood Polyclinic, formerly Prof. of Pathology. Illustrated, third edition. Revised and Enlarged. Published by E. B. Treat & Co., 241 W. 23rd St., 1908.

Cancer—Relief of Pain and Possible Cure.—By SKENE KEITH, M. B. F. R. C. S. Ed. and GEORGE E. KEITH, M. B. C. M. Publisher, The MacMillan Co., New York, N. Y., 1908.

American Medicine

FRANK CLARK LEWIS, M. D., *Managing Editor.*

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The shrinking incomes of medical men furnish legitimate reasons for serious apprehension. It may be true that general economic conditions are somewhat responsible for the particularly noticeable imppecuniosity of the profession at this time. Physicians rarely get their money until every one else is paid, and when the grocer, butcher, florist and confectioner have to wait, how can the doctor expect any consideration? But that for at least five years the average medical income has been steadily decreasing is the disconcerting fact. To settle on any one cause or group of causes is impossible. A little thought however will certainly suggest, aside from the increase of doctors and the growth of new "schools," some modern features of medical practice as possible factors in a condition that is daily growing worse instead of better. Not the least prominent are lodge and club practice and the abuse of hospital charity. It is high time that the profession realized the growth of these evils and took active steps to avert the dangers that threaten.

Lodge practice has all but pauperized the medical profession of Great Britain and Europe and it is a hydra-headed monster that will work infinite injury in this country unless it is promptly attacked and destroyed. Dr. George E. Holtzapple¹ has recently in-

vestigated the subject in a most careful and painstaking manner, and his valuable and interesting paper furnishes much food for thought. By sending out interrogatory letters, Dr. Holtzapple was able to collect some reliable data to the effect that in 105 Pennsylvania towns 63,238 individuals receive treatment at an average annual charge of \$2 per member! When it is considered that this amount entitles the whole family of each lodge member to treatment, it will be seen that it represents not more than \$1 per individual for a whole year's medical attention, or less than 2 cents a week!

In the discussion of Dr. Holtzapple's paper it was rightly stated that lodge practice places the practice of medicine on a purely commercial basis, inhibits organization, prevents the physician from obtaining proper remuneration for his service, throws a blight on medical progress and reduces the physician who engages in it to the position of a poorly paid servant of the organization by which he is retained.

It furthermore lowers the dignity of an honorable calling and greatly depreciates the value of professional services in the public mind. Physicians who undertake lodge practice are usually beyond ethical influences, but there ought to be some method by which they could be called to account for the harm they do to the legitimate practice of medicine.

¹Pennsylvania Med. Jour., April, 1908.

Hospital and dispensary evils are even more baneful than those from lodge practice. There are communities, and their number is constantly growing, where probably fully fifty per cent. of the people get their medical and surgical treatment in free hospitals or dispensaries. Of these people all but a few could and should pay reasonable fees. Charity to the needy is beautiful and noble, but to the undeserving it is shameful and demoralizing. The abuses of medical charity in New York City are little short of scandalous, and they are unquestionably duplicated in every other large city. The medical profession is itself principally to blame. It is unnecessary to go into details, for every medical man is familiar with them, but ill directed ambition to "build up clinics" and outshine other institutions has done an infinite amount of harm to legitimate private practice and medicine in general. The prodigality with which medical men have lavished free treatment has certainly cheapened medical services, and if the laity discount the value of medical treatment—again, the medical profession is solely to blame.

Reform in methods of administering medical charity sooner or later must engage the earnest attention of medical men. No other profession is called upon to give so much of its time and labor gratuitously and it is to the everlasting credit of the medical profession that it responds so freely and uncomplainingly. But certainly a benefactor has a right to seek protection against imposition and to insist that the objects of his benefactions shall be worthy and deserving. Every fair minded citizen will grant the justice of any movement to lessen the abuses of hospital charity and we believe

that all the lay co-operation necessary will be forthcoming. It is the missionary work that will have to be done in the profession itself that makes us just a trifle pessimistic in regard to any substantial reform in this direction for many days to come. In the meantime medical men will go on blindly jeopardizing their prestige, lowering their incomes and needlessly imposing hardships on those who are directly dependent upon them for support and comfort. Can this be right?

The double water system for cities is now engaging the earnest attention of sanitary engineers. The increasing difficulty of securing unpolluted water for dense populations has naturally suggested the idea that the polluted unfiltered water might be used for extinguishing fires, watering lawns and streets, flushing plumbing, for scrubbing and in manufactures where possible, but delivering the scanty supply of pure water in a separate system to kitchens. An extra charge will be necessary of course, as pure water is already a rare and expensive commodity. It might be too precious to use in bath tubs, though such a condition of affairs would be deplorable. The suggestion is of value and appears to be the only solution of the problem, unless rain water is collected as in many of the cities of the Mediterranean basin. The double system is really the old method used by farmers for centuries—a carefully guarded well or spring supplies the little water used in the house, while a nearby creek is the source depended on for all other purposes. In the meantime we must depend upon the numerous companies organized to sell pure drinking water in bottles unless we prefer to run the risk of being infected either directly by the pol-

luted water or indirectly through foods infected by it.

Sewage disposal is probably the most important sanitary problem now before the American public. It is self evident that without the present system of water carriage of wastes, our dense city populations cannot exist. The trouble always has been the recklessness with which we pour the filth into a neighbor's water supply—as criminal as though we kept our back yard clean by sweeping everything into the well of the next yard. A century ago, when cities were small and houses scattered, and when sewage was unknown, every stream was safe drinking water but now we have suddenly awakened to the fact that we have ruined nearly all of them. Fortunately there are signs of a wholesome reaction. The Pennsylvania state legislature has recently passed a law forbidding the pouring of untreated sewage into any stream used as a water supply. It is a revolutionary step which every clean thinking man must applaud. It is reported that the City of Norristown proposed to defy this law and construct the old fashioned system which will still further pollute Philadelphia's already filthy water. The state health authorities are preparing to fight the matter in court and everyone wishes them success. Cities must be decent even if they do not care to be.

The treatment of sewage is done so cheaply and efficiently, that it occasions considerable surprise that cities are so slow in adopting this modern means. Foolish, short-sighted Chicago spent scores of millions of dollars on a drainage canal, which, though a great improvement on old conditions, utterly fails to do what was pre-

dicted. If that city had spent but a fraction of the amount on a half dozen sewage disposal plants, it could safely pour the resulting fluid into its own water supply, for it would be safe to drink. At present it is in the unenviable position of throwing its untreated filth on someone else. The court decision in their favor was a positive disaster, for it checks the movement for decency in our national sewage habits. We hope to see the time when every city will be compelled to turn its sewage into proper establishments where its impurities will be destroyed by bacterial means either in septic tanks or in the surface soil. This may require a separate system for rain water, but it will soon pay for itself and the extra expense need not worry us.

The extravagance of wasting sewage is now realized for the first time. The most expensive foods are the nitrogenous ones and they cost much because nitrogen fertilizers are so expensive. There are perpetual streams of nitrogen, in the shape of wheat and meat, poured into England from all over the world. The resulting nitrogen compounds of the excreta are poured into the ocean though they have an estimated value of 80 million dollars—a most serious waste in view of the need of more fertilizers and more food for overcrowded communities. If properly managed, the natural disgust aroused by sewage fertilization will disappear and the world be that much more prosperous. It will soon be a serious matter in America too where so many farms are being "worn out" by deprivation of nitrogen. Perhaps, after all, the needs of agriculture will reverse our sewage policy, leave our drinking water clean, and reduce our sickness and mortality.

The A. M. A. Meeting at Chicago, June 2-5 promises to be one of the best and most important in the history of the organization. Every medical man who possibly can should attend this meeting. The opportunity to come in personal touch with America's foremost physicians and surgeons, to rub shoulders with one's fellow workers is not to be lightly passed. The published program is excellent, many interesting clinics have been arranged and everything possible has apparently been

kind is harmful. There is a middle course, however, shown by frank expressions of criticism or commendation as occasion demands which never fails to lead to real progress. This we commend to the American profession.

Doctor Dismissed; Used Anti-Toxin.—

White Plains, April 6.—Because Dr. Edward W. Weber, who for two years has been house physician to the Westchester Temporary Home at White Plains, insisted that anti-toxin be administered to the chil-



HERBERT L. BURRELL, M. D., President-Elect A. M. A., 1908.

done to insure a pleasant and profitable session.

Every physician owes it to himself to join the A. M. A. and partake of the advantages to be derived from affiliation with the national body. And more than anything else, having affiliated, he should make his influence felt as far as possible for the general good and benefit of the whole organization. Membership in any body imposes certain obligations. Indifferent membership is as useless as the contentious

dren suffering from diphtheria on account of an epidemic of the disease now in the home, and which he says Mrs. Mary Jordan, the superintendent, refused to permit, he has been dismissed by the board of managers.—*New York Times*.

Refusal to use anti-toxin is considered to be criminal and any physician who would lose cases through such conduct would stand a fair chance of going to prison if a test case were made. It is somewhat amazing then that the physician to the Westchester

Temporary Home at White Plains should have been dismissed by the board of managers, because he insisted upon using antitoxin in an epidemic of diphtheria among the children of the home, after his treatment was disapproved by the matron, Mrs. Mary Jordan, who did not believe in such new fangled medicine. If the courts and law officers of the Great State of New York cannot send Mrs. Jordan and the managers to prison for long periods, providing of course that the facts are as alleged, then we must be in the dark ages indeed.

No nobler tribute was ever paid by one physician to another than that found in the following eloquent statement recently made by Dr. A. S. Harshberger:¹

"My friend and fellow practitioner, Dr. Parcels, and myself have followed our profession side by side for thirty-six years. Through sunshine and shadow, through darkness and light, through blasting winds of winter and burning suns of summer, through adversity as well as prosperity, and through all these busy years of professional association there has never been an evil word originating from either of us to mar our professional and personal relations. The innuendoes and vituperations of the laity have failed utterly to cause a breach in our honor and respect for each other, in our social, personal, or professional relations. And I am glad to say that in our advancing years of life we look for the same conditions to continue. I have stood by the bedside of this fellow practitioner during his dire distress and he has done the same for me without expectation of fee or reward, save that of professional honor and professional respect."

The petty little intrigues, the bickerings and the suspicions that are allowed to taint so many of our lives, somehow or other shrivel up and become puny indeed when we read the foregoing and find that there is something more than hatred, envy

and unkindness in the professional world after all.

It is a short race, this thing we call life. We jostle and crowd to get well placed; with the lust of winning, we run and run, and never give thought to the men who are running, too. Their hopes and aspirations, their falls and defeats are only transient incidents in our own ceaseless struggle to win. If we notice, or are noticed, it is too often a snarl, or a curse, maybe a blow. But always it is on, on, until some day, ah, some day we drop out. Our race is over. Some we have passed, many have passed us. But in spite of all the intensity, the desire and struggle to win, the heart throbs and the excitement, what a pitiful little race it all really is!

And when there is brought to view such a friendship as that of Dr. Harshberger for his fellow worker, the emptiness and utter uselessness of the whole bitter struggle so many of us allow ourselves to be drawn into becomes all too plain. A vision of a winding country road, calm and peaceful, with its shady stretches and frequent vistas of waving fields and happy homes, persists in coming to our mind's eye. And we wonder—we wonder if he who runs the fastest and the hardest does not lose the most of life's prizes, after all.

We do not know Dr. Harshberger and Dr. Parcels—we wish we did—but God bless them, and all other men who refuse to sacrifice the blessings of friendship for nothing more enduring than life's cheaper prizes of gold and glory.

The unauthorized refilling of prescriptions has caused no end of discussion from time immemorial and it is most unfortunate that the commercial side of the matter should always have received more attention than the professional. When a prescription is written it is advice for a particular patient and for a particular stage of the disease—

¹Pennsylvania Med. Jour., April, 1908, p. 554.

facts which are known to everyone of intelligence. Should the patient again become ill, by a recrudescence of the same disease or by the invasion of another or if the old disease should take a new turn, his common sense prompts him to obtain new advice as to the proper course to pursue. People of little intelligence look upon medicine about the way an Indian does—its all “good medicine”—and one kind is suitable for numerous ailments in every stage. So there is a constant temptation to renew prescriptions and even force them upon neighbors. Of course an enormous amount of harm may be done by this very human and therefore ineradicable tendency. In addition there is an unnecessary expenditure for drugs.

The ownership of a prescription has been debated before courts and in spite of very heated arguments on each side, it is doubtful whether any decisions have ever reached the core of the matter and apply equally to all other professions. A lawyer sells his advice, verbal or written, and there is absolutely nothing to prevent the buyer from showing the paper to friends and neighbors who have need of guidance in a similar situation. If they act upon the old opinion they must run the risk of the conditions being appropriate, and if the matter is serious enough they instinctively apply to the lawyer for a diagnosis of the legal situation. An architect likewise sells his advice and plans and these too are appropriated by others. So far as we know, there has never been objection by these two professions, for they know that when a new case needs professional supervision they will be called on for service as well as advice. The physician's contention that the prescription is his and cannot be used again, thus attempts to place such advice upon a different commercial status than that of lawyers and architects

and will never stand, even if favorable decisions are now and then obtained.

The prevention of all abuses is impossible—until the millennium comes or at least until all men have sense. If a man wants to act on legal advice given to another man or for another occasion, it cannot be prevented. If he tries to build a house on the plans borrowed from a neighbor, he can do so. Neither lawyers nor architects claim ownership of what they have sold—nor should physicians. The recent attempt of the Louisiana State Board of Health to prohibit the refilling of prescriptions without a physician's order in each case is no doubt done to protect the foolish who would injure themselves in health and pocketbook. It was in the interests of public health, but is most unwise as the abuse cannot be corrected as long as human beings are constituted as they are. Besides it has brought out the criticism that it is solely for the benefit of the doctor and not the public. This kind of criticism is as bad as the opposite statement that druggists look upon the law as an infringement of their trade. In addition it is as repugnant to our sense of personal liberty as to require one to pay an architect every time he wished to tinker his house. The expense involved would prohibit enforcement in either case. It would be possible and indeed desirable to prevent the renewal of any prescription containing alcohol, cocaine, morphine, acetanilid, digitalis, aconite, or any drug which will have a cumulative effect on heart or nerves or create harmful habits, but wholesale prohibition appears to be distinctly unconstitutional and might be considered class legislation. The action of the Louisiana Health Authorities though conceived in the noblest motives is regrettable and should be revoked.

ORIGINAL ARTICLES.

SYPHILIS.*

BY

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(Continued.)

Diagnosis: In the diagnosis of syphilis the finding of the treponema pallida in suspected cases is positive. The serum diagnosis while no doubt of value requires special training, as it is rather complicated. Inoculation of apes with a resulting primary lesion after a period of incubation and the recovery of the treponema from this lesion is also positive evidence. In the majority of cases of recent syphilis, the diagnosis is not difficult. The hard indurated sore; the enlargement of the lymphatic glands, particularly the post cervical and epitrochlear glands, followed by the skin eruptions and mucous patches in the mouth are conclusive. But only too often the sore has been cauterized and made hard and indurated; the skin manifestations retarded by mercury, then it is that the more exact methods of diagnosis prove serviceable. In fact they should be used in all suspected cases, particularly the search for the treponema. Some care and practice is necessary in this and the careful staining of thin smears and sections with specially prepared stains is necessary. Giemsa's stain is good for smears and silver nitrate for sections.

Yaws (13) and syphilis are the two spirilla diseases which most resemble each other. Morphologically the organism of these two diseases cannot be distinguished. Bacteriological differentiation is therefore

not possible. The two diseases are quite distinct, but when they exist in the same community, accuracy of diagnosis demands that the inoculation of apes with the virus from the spirilla lesion be resorted to. The initial lesion of the two differ, syphilis showing induration and yaws muriform papilloma. Further investigation of the clinical manifestation of yaws is desirable in the determination of the presence or absence of cutaneous lesions in addition to papilloma, also as to lesions of the mucous membrane and viscera. Clinical resemblance long supported the idea of the identity of these two diseases. Yaws is very common in tropical regions. The disease is therefore of some interest to us as in recent years our territory has extended to those parts of the world.

It will be noticed that nothing has been said in regard to the history, time of infection, etc., for we are considering the cases of those innocently infected as well as those who have reason to know when they contracted the disease. Chancres of the lip, eyelid, fingers and hand are often met with. Within the past year the writer has met with two cases of chancre of the lip, caused by the sufferer smoking the pipe used by a syphilitic. In 1905 de la Roche (14) reported the following case: A young woman of good family consulted an ophthalmologist for a sore upon her eyelid. He found a typical chancre on her left lower lid and later observed the symptoms of constitutional syphilis. The woman was a bride who on her wedding trip developed a sty. A chambermaid agreed to cure it by rubbing and used in the process her finger, moistened with saliva. The result was the syphilitic infection of a clean woman and the establishment of a new

focus for the spread of the disease. The same authority states that such a primary sore is not infrequent as the result of the application of the tongue to the eye to remove a foreign body. Blaschko reports the cases of twelve doctors seen in ten years infected in their professional work, most of them having chancres on the fingers or hands. I have knowledge of three such cases myself. I have seen two cases of malignant syphilis within the past year. One of these cases is of interest on account of the various manifestations present at different times. At one time the case might easily have been mistaken for smallpox, it in fact resembled that disease more than anything else. At another period typhoid fever was closely simulated.

Case 1. Was sent down from Bangor with history of sore on penis for eight days. He gave history of exposure ten days before appearance of chancre. White male, aged 24 years. When admitted to hospital patient exhibited symptoms of secondary syphilis as well as recent chancre. He stated that three months before he had also had a chancre which disappeared under treatment. The Acting Assistant Surgeon at Bangor stated that it was the first case that he had seen of a double infection existing at one time. Reinfection would probably have been a better term as two chancres made their appearance before secondary manifestations set in. When the patient first entered the hospital he was badly salivated. There was a rash on his body and he had a sore throat. Mercury could only be prescribed sparingly on account of the acute poisoning. The man was admitted on April 22 and not until April 29 did he develop any severe symptoms. At this time a fever set in. This fever lasted for eighty days. The temperature running from 38 degrees to 40 degrees C, higher in the evening than in the morning, but never reaching the normal. The patient suffered greatly from insomnia and was fre-

quently delirious. During this time the man also developed the most intense form of cutaneous eruptions, confluent and large pustular syphiloderm, tubercular ulcerous syphiloderm, serpiginous syphiloderm, of the scalp, with iritis. Suppuration of glands and ulceration of throat and bleeding gums. He was truly a pitiable sight to behold. The pain was at times excruciating and he would rave in his delirium for hours at a time. The fever was controlled to some extent by cold baths and sponging, but he was so horrible looking and his body such a reeking mass of sores that bathing was difficult. Mercury with potassium iodide was given in small doses but the stomatitis would get worse and the drugs had to be stopped. Temperature chart will show range of fever. McDade's formula of prickly ash, burdock, stillinga, poke root and sarsaparilla, with 1 gm. potassium iodide to each 4 c.c. was tried, as the case was desperate, but nothing seemed to do any good. At last, in view of the fact, that I thought that the man was going to die soon if not relieved, I began the use of intravenous injections of potassium iodide, giving $1\frac{1}{2}$ grains in 15 drops sterile water, made fresh each time. From the very first day the patient began to improve. On June 13th the first injection of 1 cgm. potassium iodide was made into the median cephalic vein. The man had now had a fever for forty-five days. The injections were given once a day and after three days the temperature dropped from 39 degrees C., (102.2 degrees F.), to 37 degrees C., (98.6 degrees F.), or normal. Note from clinical chart made at this time says, "Under the influence of potassium iodide, injected into veins, the eruption is disappearing and the temperature is normal." After using the intravenous injections for ten days, temperature remaining normal, I stopped them on the 23rd in order to ascertain whether or not the temperature would rise. In four days the temperature rose to 39.3 degrees C. On 27th injections were again commenced using two grains once daily. Note at this time states that injections of .13 gm. of potassium iodide directly into veins has reduced tempera-

ture from 39.3 degrees C. to 37 degrees C. This treatment was kept up for some time, and a little later intramuscular injection of bin-iodide of mercury was used. The man made a good recovery and was discharged March, 1907, having been in the hospital nearly a year. The points of interest in this case are the long continued high fever; the general malignant course of the disease and the fact that intravenous injection of potassium iodide was the only thing that exerted a favorable influence on the symptoms, especially the fever.

Case 2. J. G., white, male, age 35 years. Gives history of chancre followed by eruption on body about twelve months since. At present he complains of pains in the head, especially at night. On day before he entered hospital patient says that for a time both hands became helpless and all feeling was lost in them. He complains also of eyesight being poor, and weakness of the legs. When hands are touched he has sensations as if pins were being stuck into them. The gross muscular force is very good and the grip of the hands fairly strong. Diagnosis, syphilis of brain with probable tumor of cerebellum. Patient given twenty grains of potassium iodide by mouth and one-tenth grain bin-iodide mercury by intramuscular injection. Note two weeks later, "Patient does not seem to improve under treatment. Headache much worse; suffering greatly from insomnia." Intravenous injections of potassium iodide, 13 gm., once a day now used. This relieved headache but was stopped after a few weeks on account of patient being nervous and afraid of injections. The headache returned. Antipyrine was tried, as was also codeine, but neither did any good. On June 26th the clinical note states, "that headache is very much worse since the intravenous injections were stopped." On the 30th the injections into veins were resumed and gave some relief. On July 9th patient says he cannot see. The eye affection came on suddenly. Complains of constant headache, legs very weak and suffers greatly from insomnia. Trional and codeine give some relief. Patient has involuntary passage of urine, keeping bed constantly wet. Man lived for some

months without improvement, toward the last his mind failed. Necropsy showed membranes of brain congested. Left side of cerebellum is broken down and destroyed by abscess necrosis. Hemorrhagic area in right lobe. The anterior left lobe of cerebrum, was affected. Anterior left lobe of *cerebrum* was affected by abscess formation. The right hemisphere of the brain contains hemorrhagic areas independent of abscess formation, etc. The points of interest in this case are, the early attack of brain and the rapid and steady advance to a fatal termination in spite of the most strenuous treatment by intramuscular injections of mercury and intravenous injections of potassium iodide.

Brown Pusey (15) reports a unique case of secondary syphilitic pustular eruption invading the cornea and bulbar conjunctiva which rapidly cleared up under specific treatment. Pusey reviews the literature of conjunctival syphilis. He collected twenty-seven cases. Syphilis of the cornea he regards as very rare even if it occurs. Joseph Abraham (16) reports four cases of syphilitic empyema of the accessory sinuses of the nose, accompanied by nasal discharge and fetid breath. He thinks the disease very rare, but concludes that syphilis may attack any part of the upper air passages.

Prophylaxis. In the prevention of syphilis much good work has been and is being done. In New York and other cities of the country as well as in many European cities, societies have been formed, notably the American Society of Sanitary and Moral Prophylaxis. A general campaign of education seems to be the only available way in the opinion of most writers on the subject to control the disease. This is a very laudable undertaking, and one with which I am entirely in accord; but something more than education is needed. There is a certain class, and these are the very

people who disseminate the disease, who will pay no attention to advice, whether given orally or by means of printed matter. For these people restrictive measures are certainly needed. I have been told by some of these that as they had been caught they intended to catch as many more as possible. They really seemed to take a pride in spreading the disease. We have laws now in force which forbid any one under penalty of fine and imprisonment from visiting persons suffering from contagio-infectious diseases and then passing around among other members of the community and thus spreading the disease. Are there not laws which make it obligatory upon the physician attending a case of contagious disease to report the same? Does not the law take cognizance of all these things? In no other case is a person suffering from a contagious disease allowed to roam at large spreading whether inadvertently or not, disease and devastation. I have already mentioned the well known fact that the saliva in syphilitics is virulent and readily imparts contagion. While preparing this paper, in fact not more than an hour before I penned these lines, I made smears from the saliva and slight surface scrapings from the mouths of three patients suffering from syphilis, and in each case after staining, found the *treponema pallida*. These men have been under active treatment by the intravenous injections of biniodide of mercury and the iodide of sodium for about a month and all external signs of syphilis have disappeared. There are no outward signs of syphilis, no means by which any outsider could tell that a poisonous serpent was sitting by him in the street car or eating at the same hotel table, and yet all such cases are dangerous to society.

I have been treating five of these cases in the early secondary stage at the same time, but much to my disgust two of them left as soon as the skin lesions began to fade. One of them a Greek, was still suffering from a chancre and both had the disease in a readily communicable form. What I should like to have done when these men asked for a discharge, would have been to inform them that they were not free agents, but under restraint until they ceased to be a danger to the community. Such a regulation exists in the city of Hamburg. Dr. Bierhoff (17) states that men as well as women who are suspected of being a source of infection are subject to examination and detention. Persons who are examined and found to be diseased are sent to the venereal wards of the city hospital where they are kept and treated. A temporary absence is allowed only upon consent of medical and police authorities. There is no one I dare say who is acquainted with the dire results of these diseases, especially when contracted innocently, and therefore neglected until they are firmly fixed, who would not prefer to take their chance with typhoid fever, the exanthemata, and even tuberculosis. And still we have no way of restraining people suffering from these diseases. Before we can hope to get any protection by law, a campaign of education must be fully inaugurated and intelligently carried out. False modesty must be laid aside. A proper and efficient work can be done without shocking the sensibilities of the most delicate. Prince A. Morrow (18) in an address before the American Society of Sanitary and Moral Prophylaxis says, "Women, modest and refined, the most womanly of women, are not offended by

our plainness of speech; their feeling is not one of outraged modesty, but of indignation, rather of resentment, that matters which so materially concern their health and the health and life of their children have always been concealed from them by the medical profession." He goes on to say that it is in his opinion eminently proper that women should interest themselves in the movement. In my opinion the profession should educate the laity as to the dangers of venereal disease and let them shoulder their part of the responsibility. "We must educate or short will be our race from the cradle to the grave." We must necessarily rely more upon education than upon restriction. It is the duty of parents to teach their children the origin of life beginning with the lowest forms, explaining how the bee fertilizes the flower by carrying pollen from one to another. How the female fish spawn, the male following later to make his deposit in order that life may come from the eggs. Later the lesson may include those cases where actual contact between the male and female takes place. "Butterflies," a tale of nature by James Lane Allen, speaks plainly on the question. It will not be difficult after having pointed out the origin and sacredness of life, to also point out that nature has so arranged matters that the male shall seek the female in order that the species shall not become extinct, and then the question of morality and the dangers of infection may be taken up. No one can afford to sit back, smile complacently, and say, "These things do not concern me; there is no danger to me or mine." I say to all such, there is danger, there is also a duty we owe to one another. Anything like accuracy in stating the pro-

portion of cases which acquire this disease innocently is not possible, but it is much larger than ordinarily believed. Tornorsky, in Russia, says over 70% of the syphilitic morbidity is due to extragenital infection, the disease being unrecognized and untreated for years. In this country from 10 to 15% among males and from 25 to 75% among females who are suffering from syphilitic disease acquired it innocently. The innocent often suffer, and being innocent their sufferings are more prolonged and intense. I have already spoken of the bride who contracted syphilis of the eye from the saliva of the maid. I could add half a dozen other cases which I have observed, but no doubt each of you can call from your experience similar cases. I was once consulted by a young man, who belonged to a good family, as to whether it would be safe for him to get married. As he asked the question, he protruded his tongue. I saw at once and understood. There was a large mucous patch on the side of the tongue and another on the lip. I strongly advised against marriage until he had been treated for at least two years. My advice did not suit him so he consulted another physician, who, as the man told me, said he could straighten him out in a few weeks and he could marry. Well, he married a pure, lovely and happy woman and inside a year she aborted a syphilitic child and died. The husband full of remorse, threw himself away and practically went to the bad. Two innocent lives sacrificed and a useful man ruined. All know that abortion and death are often due to syphilis. I will not speak of the children made blind and the women who suffer from uterine and tubular diseases, and who are often rendered sterile and often come to the operating table

through no fault of their own, for that is not included in our subject and the gonococcus is another story. It is probably impracticable to attempt anything at present by legislative or administrative measures. The length of time necessary for isolation of venereal cases before they are cured and the consequent great expense will render legislative action difficult. We can hope for nothing from vaccination since we know that inoculation does not protect. The question as to whether physicians should report these cases or not, is also one on which opinions are bound to differ.

From a legal point of view the counsel for the Medical Society for the County of New York, Mr. Purrington (19) gives the following opinion, "In the state of New York and in many other states, there is in force a rule of evidence, which forbids licensed and regular physicians, professional or registered nurses to testify in any legal proceedings, without the patient's consent, to any knowledge acquired in attending the patient in a professional capacity and necessary to enable them to act in that capacity." It would probably be as well if this question was left to the discretion of the physician. Reporting cases with a view to their subsequent isolation and treatment is probably impracticable. If it were practicable, I have no doubt the knowledge of the fact that quarantine was probable would have a salutary restraining influence. With Eschylus we think, "it is good that fear should sit as a guardian of the soul forcing it into wisdom," and according to criminologists fear is the strongest influence in the prevention of crime. Klotz (20) is however of the opinion that such a step is out of the question. The principal result of such a measure would be to make the patients con-

ceal their troubles, even more than now, and drive them into the hands of quacks and unscrupulous physicians who would avoid making any reports.

(Continued in next issue.)

ORTHOTIC ALBUMINURIA; ITS RELATION TO TUBERCULOSIS.

BY

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The term "albumin," as used in medicine, has become falsely synonymous with protein, therefore, albuminuria signifies the presence of protein and proteoses in the urine. I include the whole group because an exact distinction is impossible. We have to deal with about eighteen related bodies, the recognition of which, by our present chemical reactions, is imperfect and impossible. Only the ferment reactions of Emil Fischer, or the color tests of Landsteiner, Ehrlich, Gieseler and others give true distinctions.

For this reason I comprise in this paper under albuminuria, all proteinurias.

Nor am I satisfied with the term "orthotic" or "physiologic" albuminuria. The cry for a name is as ardent as when Merklen asked, "What name?" I adopted the term "orthotic" as suited to express best the diminution of the proteids during recumbence in most of the cases observed, for which manifestations, terms were adopted; such as, "orthostatic, postural, intermittent, transitory, functional, physiologic, cyclic latent, essential, emotional, etc."

To understand better the evolution of our present knowledge on this subject, I give a history of the most important early contributions until the modern epoch initiated by Leube.

In 1786, Fordyce stated that urine contains serum and coagulable lymph. In 1788, Cotugni recognizing albumin by boiling, and taking same as identical with egg-albumin, began a misnomer from which we seem to have been unable to find riddance. Up to Spittal all albuminuria was connected with dropsy or Bright's disease and no distinction was made until Desir in 1835 first described a transitory albuminuria, followed in 1838 by Solon who distinguished between coagulable and precipitable albumin.

Osborne and Willis contributed in 1840, and Christisen found it first in the healthy; and Becquerel in 1842, "without the slightest reason." In 1843, Prout declared its presence to be normal. Graves and Abeille found in the same year no connection with renal disease. In 1844, Rayer, and in 1846, Malmsten. Hoeffle found it in 1848 also in the healthy. Walker and Delarnelle, in the same year. In 1849, Abeille. In 1850, Ravin, Fränkel, Ravoth. In 1851, Moser, Strahl, Frerichs. In 1852, Simon considered its presence as pathognomonic; further Beneke, Rees, Begbie. In 1853, Heintz. In 1854, Guber, Leyden, Munk. In 1855, Zimmermann. In 1856, Neubauer, Vogel, Traube, Becquerel, Bernois, Huppert, Balfour. In 1857, Skoda. In 1858, Oppolzer, Gigan, Bernard. In 1859, Thenard. In 1860, Valentiner, Koerner. In 1861, Ziegler, Hamon. In 1862, Stökvis, Mannkopf. In 1863, Rosenstein, Wundt, Stökvis, Abeille. In 1864, Smoler, Coroisart, Schiff, Dupuytren. In 1868, Dohrn, Gerhardt. In 1869, Pollok. In 1873, Kjellberg, Jackson. In 1874, Huppert. In 1875, Semmola. In 1877, Leube.

Prout had relatively few followers who considered albumin a normal constituent of the urine, (only Washburn, Poesner, Mal-

fatti, Dwight, and lately Senator.) Simon, naturally, also found strong advocates in Balfour, Millard, Fulton, West, Brunton, Plosz, Winternitz, Jasiewicz and, to a certain extent, Talamon, Lecorché and Sturgis. Osler said that the presence of albumin in the urine in any form and under any circumstances is pathologic. Tunis cannot consider the individual healthy; neither can Curschmann. Aubertin claims these cases to be manifestations of a terminal nephritis, while Long, Bennett, Clark, Wittington, Chabrely, Porter, Cuffer and Gaston seem to recognize a prodromal stage of nephritis.

Contributions about albumin in the healthy came from the pens of Christisen, Hoeffle, Becquerel, Edlefsen, Gentzen, Ruttan, Munn, Octerlony, Leube, Peterssen, Taykull, Erlanger, Willis, Ewald, Hauser, Anders, Boston, Klemperer, Johnson, Poesner, Richter, Châteaubourg, Misiewicz, Capitan, Finot, Mesnard, Lantos, Westmoreland, Pavy, Tyson, Saundby, Gairdner, Eddison, Germain-Sée, Berceusius, Huger, Meigs, Ellis, Kelly, Ziffer, Fox, Brunton, Buignies, Edwards, Filipowitch, Caillé, Ott, Moxon, Duke, Lucas, Leuhartz, a. o.

Semmola declared it merely a symptom. Zeehuisek found albumin in 28% of his examinations without apparent lesion. Stuart's statistics of 505 healthy show albumin in one-third; similar results had Charles and Stökvis. Moore in 6%. Zeehinsen and Noosden claimed albumin for 60-68% of all their examinations.

Cabot found no lesion in the autopsies of twelve cases, which had albuminuria during life. Stengel believes that the significance of traces of albumin is generally exaggerated.

Musser says that albumin is no indicator of any disease of any organ, nor does it point to any general pathologic condition.

In fact, examiners for life insurance were specially interested in this question and took such views. Munn found albumin in 11% of the examined. Symond's report of 3,000 declined applications shows no influence upon prognosis. Pavy, Sir William Roberts and Clement Lucas recognize the insignificance. (Contributions: Munro, McGraw, Hitchcock, Stoner, Miner).

At the Life Insurance Medical Officers Association meeting in London in 1894, Thompson accepted transient albuminuria as a harmless manifestation and was supported by men like Heron, Pollock, Hoar, Olgivie, Hungston and Fox. Some like Hall, Purdy, Breeman, Wood, Rothrock, Lecorché, Talamon, Porter, Bickerton advise against such as risky. At a late Congress of Insurance Examiners, Fox stated the possibility of a harmless form of albuminuria due to hematopoietic conditions.

The fact that we have no generally recognized name for the condition under discussion, a manifestation for which Ellis gave one hundred and fifty conditions, makes understanding difficult. The following terms had been given: "Intermittent" by Ott and Weidenfeld; "Transitory and transient" by Kinnicutt, Rayer and Rumberg; "Cyclic" by Von Noorden, Pavy and Weidenfeld. "Functional" by Raabe, West and Barrs; "Physiologic" by Leube; "Latent" by Gebhardt; "Emotional" by Filipewitch; "Essential" by Neukirch; "Orthostatic" by Gillet. Smith speaks of an "Albuminous diathesis." Hamon coined the term "Albuminurric neurosis." Tessier and Casper even accepted a disease "sui generis." These terms are partly referring to causative factors, yet one manifestation is to a more or less degree present in all. Namely, in horizontal positions the albumin

disappears, but after assuming an erect position, or sometimes after the least exercise the albumin is increased. Under above terms cases have been described which were truly orthostatic and no other causative factor can be recognized.

I mention the most typical. Long: a woman who was always free of albumin in the morning. Harringham: a male aged 13. Moritz: a lad of 17; whenever in erect position, the albumin appeared, to disappear again after assuming a horizontal position. Lunis: a boy of 12 years. Neukirch: a child of 10 had these manifestations for five years. Tiemann: boy of 15. I hesitate to accept Kennedy's and Heubner's cases as true orthostatic, because the former succumbed later to nephritis and the latter had brain tumor and pulmonary lesions. Other typical cases were reported by Schmidt, Heymann, Davis, Archard, Mery, Leuhartz, Forges, Pribram, Touchard, etc.

Studying the majority of the cases reported under the before-mentioned terms, it is astonishing to note a similarity to these cases just referred to, a similarity which induced me to accept the term "*orthotic*," as general.

Filipowitch called his case emotional. In the description we see that the urine was normal in the morning. Mendel, Huger, Birk call their cases "cyclic." They mention the fact that the urine was normal after a night's rest. Gubler as far back as 1854 noticed no albumin in the morning. Guyon observed that motion increased albuminuria. Symonds, Tiemann, Kelly, DaCosta, Capitan, Finot, Richter, Mason, Heubner, Loeper, Châteaubourg did the same. Balfour in 1856, and later, Huger, noticed the difference after change of posture. Pavy, Roberts and Lucas, for these reasons advised that the urine be examined for life

insurance at different hours and at least four times daily.

Our knowledge of the proteins is imperfect. We have to deal with complicated molecular structures. (Cohnheim).

In our attempt to understand the exact nature of these proteinurias we have not progressed very far. In fact, we just begin, since the experiments of Emil Fischer succeeded in constructing albumin synthetically, to feel that our task is harder than we thought, and that all classifications of albumin, albumoses, etc., are faulty. We have to do with amino complexes of over thirty acid chains. The recognition of a multitude of bodies is old, since Solon. Balfour claimed the albumin in the postural albuminuria to be pus. Oppolzer and Hauser differentiated albumin with casts and without such, a distinction which until lately was by many considered to be of great value, while they overlook the fact that the presence of casts is a symptom of local renal pathogony.

Brunton did excellent work. He excluded serum-albumin from that of functional manifestations as not sufficiently diffuse. Later on he and Power tried to differentiate several kinds by their coagulation point. Patton was able to separate by dialyzation a body of crystalline globulin. Semmola lays stress upon the fact that albumins of functional appearance are dialyzable. The experiments of Bernard, that egg-albumin in its original form could be demonstrated in the urine after venal injection, while blood serum could not be detected, was taken as a standard; and the additional fact that albuminoid bodies, obtained from the urine, injected into other animals appeared again in the urine, spoke for the later tendencies. (Pepper).

Stökvis spoke of acid albumin. Many like Csatory, Carter, Pichler, Vogt and others see special forms of albumin for the orthotic manifestations, mostly nucleo-albumin. Moerner claims this nucleo-albumin to be a combination of serum-albumin with chondroitin, sulphuric, nucleinic or taurocholic acid. Langstein maintains that orthotic albumin always precipitates cold with acetic acid.

Senator in his famous monograph on albuminuria defines urine a product of transudation which normally contains certain amount of proteids like all transudation fluids, and that this normal amount can be increased in such quantity to the production of what Leube calls "physiologic albuminuria." This statement called for an animated controversy, mostly with the French school, especially Lecorché, Talamon, and Jasiewicz. Winternitz and Plosz took the same stand.

Accepting and enlarging the hypothesis of Senator, we must search for an explanation of how the proteins reach the urine and where they come from. *Even admitting that minute quantities of some form be normal, what are the factors of increase of amount?*

As far back as 1861 Semmola taught that the diffusible albumin in the circulation must be secreted by the urine. Later he said that the normal albumin of the blood in its true physiologic state never passes into the urine; hence, the fundamental biochemical conditions under which the albumin of the blood can pass into the urine depends upon a dialyzable and diffusible property, different from the normal physio-molecular structure. Therefore, whenever for any reason dialyzable albumin exists in the blood, albuminuria must follow. This may

mean different conditions: First, presence of foreign bodies in the circulation or an altered condition of the proteids of the blood-plasma itself. Each of these possibilities I shall consider separately and fully.

The diffusibility of soluble proteids had been proven by many experiments. Dialyzation and diffusion correspond according to Brunton and Traube. Amongst the contributors I mention Rosenstein, Runeberg, Corvisart, Schiff, Brunton, Bernard, Patton, Landau, Graham, Barreswil, Bernhard, Thenard, Dupuytren, Osborne, Hamon, Vogel, Macacci and others.

Many attempts were made to lay down certain rules for the characteristics of such proteins in circulation which transudate into the urine. Csatory undertook to find a special albumin-quotient by division of the serum-albumin from the globulin, which bears relation to the rapidity of circulation through the glomeruli.

Freund accepted a higher coagulation temperature of these albuminoids than the normal. Fox, Wright, Ross, Kreitl, Hengstenferd, and Tunis believe in deficiency of the coagulating power of the blood and recommend physiologic tests with calcium lactate. Of greater importance is it that Loeb found the Koranyi-index increased and demonstrated a decrease of the NaCl excretion with simultaneous diminution of the quantity of the urine. Of similar opinion was Fuchs.

Of special value were the many experiments of Stökvis, Brunton, Power, Ott, a. o. These consisted in injecting into the circulation egg-albumin, which afterwards appeared in the urine. Pichler and Vogt found that the injection of casein causes nucleo-albumin to appear in the urine.

This is simply an experimental hemato-poiesis, which in such form is of no value

to us, as being the result of agents from without. Only such conditions which bring about these alterations from within are of importance to us. Faulty metabolism deserves a prominent place. Gubler saw in 1854, after the ingestion of eggs, albumin in the urine. So did Brunton after giving nutritive egg enema. *Such possibilities would arise accordingly every time after the ingestion of a greater amount of albuminous food than the individual can metabolize perfectly.*

This may mean a too heavy meal, over-eating or overfeeding, with disregard to power to assimilate and metabolize. In this sense the following expressed themselves: Barreswil, Bernhard, Thenard, Dupuytren, Osborne, Porter, Hamon, Marcacci, Brunton, Carter, Allard, Weber, Sejournet, Fox, Anders, Kaliski, Weigert, DaCosta, Legendre, Hare, Gray, a. o.

Other factors which bring about such conditions from within besides alimentation are manifold. Rees was the first in 1852 to hint at such factors, followed by Zimmermann, Porter, Wood, Neubauer, Vogel, Wundt, Senator, Semmola, Begbie, Simon, a. o. Malnutrition would belong here and was considered by some as causative. (Simon, Semmola, Poole, Becquerel). Next would be anemia: in fact, Sternberg found transient albuminuria in 3 to 4% of all cases of chlorosis. This was corroborated by Oswald, Schoen, Shattuck, Moxon, Frerichs, Gubler, Edlefsen, Burton and Zeigler. Moxon and Shattuck established a connection between senility and orthotic albuminuria. Verco was of the opinion that the body-temperature in the feeble is causative and explains the disappearance of the albuminuria after rest by the even temperature of the bed upon a feeble organism.

Here, also, belongs partly the appearance

of albuminuria after exercise and bathing by hydration or dehydration of the blood, and such changes in the blood as seen after exposure to Roentgen rays and high frequency currents, as the writer has had opportunity to observe. Other conditions may change the blood plasma. For example, any mechanical means which induces a limitation or reduction of the oxygen in the blood. Pichler and Vogt have brought on traces of albumin by such means and by the temporary obstruction of the femoral and renal arteries. Rendu found the pressure of an ovarian cyst upon the renal vessels to be the cause of albuminuria. Casaretti succeeded by applying bands to the limbs and inverting the position. Seeley did so by constricting the thorax. Johnson believes that the albuminuria after bathing, is due to the pressure of the water when the body is immersed. Palpation has produced the same symptom. (Schreiber, Menge).

Often albumin is found in the new-born, in fact, as far back as 1843, Prout declared this to be normal. Legendre claims that the delayed breathing after difficult labor is responsible for this by imperfect oxydation of the blood. Here I may mention that Semmola produced albuminuria in animals by covering their whole skin with air-tight materials. Guttmann spoke of secretions which find their way into the blood. Of importance may be the internal secretions, especially the sexual glands. I am inclined to consider as such the albuminurias of puberty. (Menstruation—Editorial in *New York Medical Journal*, July 7th, 1906).

How is it then that we do not see the manifestations more frequently, over-eating and over-feeding and malnutrition being of such ordinary occurrence, far more so than we really observe orthotic albuminuria? We have to look further. The next step

would be to look into the circulation and the hemic pressure. Such a factor doubtless exists. It is known that the urine of the new-born often contains traces of albumin. (Flensberg, Sjoquist, Dohrn, Legendre, Prout, Pollack). Aside from a possible blood change, already mentioned, I quote as high an authority as Virchow, who explains such albuminuria by the sudden change in the circulation at birth due to alterations in the hemic pressure with the first respirations.

Skoda was the first in 1851, to launch his theory of venous stasis. He was followed by Traube, Koerner, Stöckvis, Brunton, Power, Lang, Ellis, Smith, Ralfe. Brunton and Power based their belief of venous stasis upon the fact that large doses of digitalis made the experimental albumin disappear. The question of high and low pressure was discussed by many. (Landau, Loeb, Smith, Ralfe, Craig, Wiley.) Patton, Douglas and McKenzie accepted high and low pressure.

High arterial tension increases the serum-albumins and low arterial tension the globulins. Wright, Ross, and Fox believe in a diminished hydrostatic pressure in the renal capillaries.

Senator said that by standing, the venous pressure is increased and the arterial pressure decreased. This contradicts Runeberg's statement that the animal membranes are more permeable under low than under high pressure. Edel claims a paradox when he says that such influences which increase the blood pressure in the healthy, lower same in the orthotic. I refer to the articles of Landau, (Osmotic pressure), Senator (Porosity of renal capillaries), Loeb, (Insufficiency of renal vessels), Erlanger, Edlefsen, Lecorché, Talamon, a. o.

Another condition in which we find albuminuria is a period of life when the circulation is often faulty, and in fact by looking over the literature, I find that orthotic albuminuria manifests itself most frequently amongst children. As early writers as Prout, 1843, discovered this fact, followed by Kjellberg, Rayher, Dohrn, Richter, Ekert, Archembault, Dukes, Ullmann, Edwards Heubner, Buiet, Moxon, DaCosta, Tiemann, Fox, Schiff, Jones, Symonds, Chapin, Kelly, a. o.

Birk found the proportion of female to male children afflicted 4:1.

Moxon is responsible for the term of "Albuminuria adolescentium." Reyher claims that in such children the heart is found smaller than normal and therefore the circulation uneven.

Schiffer believes that the heart in such cases is not sufficiently adapted to the demands of beginning puberty. The occurrence is extremely frequent. Ullmann found it in 14 out of 42 girls below 13 years of age. Edwards reports numerous cases from Southern California.

Another condition under which circulation is heavily taxed and at the same time the Koranyi-index becomes altered, is exercise, and this influence has been recognized by the following: Koerner, Leube, Hamon, Edlefsen, Dukes, Smoler, Brunton, Johnson, Jackson, Coley, Anders, Boston, DaCosta, Richardson, Finot, Capitan, Châteaubourg, Hwass, Vanderpoel, Simon, Allard, Weber, Wood, Dunhill, Patterson, Huger, Mueller, Shepherd, a. o.

Koerner was the first to connect in 1860, fatigue and the albuminuria of the soldiers. Hamon in 1861 found the amount of albumin to be in proportion to the amount of exercise. But the great teacher, Von Leube, opened the new era of our understanding of

this manifestation when in 1877 he systematically examined the urine of the soldiers of the garrison at Erlangen. He found albumin in 4% of all soldiers examined, and in 16% after prolonged marches. Later writers attributed bicycling, racing, football and swimming. Yet, as plausible as the theory of hemic pressure may appear, I must ask: *Why do not all cases of aortic insufficiency show albumin in the urine?* (Kraus).

Furthermore we have experimental proof that hemic pressure alone cannot be causative. Seelig explained the success of his experiments at first by increased blood pressure, but the carotids failed in later experiments to register rise of pressure and on section he found the renal cortex not congested but anemic, and the albuminous granules in the glomeruli were within the physiologic limit. Besides this, the injections of soluble albuminoids in the experiments of Runeberg failed to register rise in pressure; indeed the permeability was greater under low than high pressure.

The next theory we have to consider is the neuropathic origin. Hamon proposed in 1861 the term "Albuminurric neurosis" due to a toxic irritation of the vagus. Arthaud and Butte attempted to establish a hypothesis of morbid physiology of the pneumogastric nerve in relation to the membranes and viscera supplied by it.

Vanni demonstrated that experimental neuritis of the vagus was followed by albuminuria. He with Butte and Arthaud demonstrated that excitation of the pneumogastric produced diminution of the elimination of water. Frerichs gives as cause a toxic irritation of the fourth ventricle above the glycosuric area.

Bennett, Gray, Raymonds and many others gave contributions about the connec-

tion of albuminuria with mental disease. Feré saw it in two imbeciles after fits of anger; Voisin and Peron after epileptic attacks. Lantos believes in reflex-excitation of the vaso-motor nerves of the renal circulation. Carter found albumin after prolonged anxiety. Fuerbringer described a case where albumin appeared after every nervous depression. Corlieu called it an idiopathic neurosis.

Filipowitch found albumin after emotions, but never in the morning. Weidenfeld refused to recognize any but the neuropathic causation. Gray and Wood found albumin often in the neurasthenic and neurotic. Such nervous causation led Quain, Lucas, Fox and others to explain the albuminuria of adolescence and puberty by masturbation so frequent at that age, but were contradicted strongly by Duke and Sterling.

The neuropathic origin I found further mentioned by Dukes, Huppert, Kelly, Chapin, Symonds, Lancereau, Finot, Capitan, Spiegler, Goodhart, Bertrand, Long, Châteaubourg, a. o.

That neurotic conditions may be a factor, is substantiated by the fact that neurotic conditions can be inherited, and actually there is reason to believe in an inherited predisposition for the orthotic albuminuria. Such cases were reported first by Dickenson in 1888, and corroborated by Senator, Lucas and others. Lacour, Heubner, Schoen, a. o., found several cases in one family. Dickenson even in at least four generations.

Both exercise and neuropathic influence may lead to the same consequences; that of forming fatigue toxines and exhaustion material, both of which are albuminous bodies. (*Febrile conditions, such as those where there is wasting of tissue, must have the same result*).

Deubler brought out a causative connection between the splitting up of proteids during antipyresis. Many similar observations were made by Schnaase after vaccinations. Same origin was given by Simon, Gubler, Gerhardt, Weber, Uri, Wesener, Germain-Sée, Hare, Bagdanoff, Mabboux, Lilienthal, Praetorius, McConnell.

These cases properly do not belong here, no more than the proteosuria of suppuration, puerperium or resorption, as in fact any hematopoiesis may be causative, but beyond the physiologic limit.

Last I must mention the connection between albuminuria and tuberculosis. As early as 1852, Beneke feared that the presence of albuminuria without pathologic signs might mean tuberculosis.

Similar opinions had Becquerel, Gubler, Skoda, a. o. Bruhl, Schröder and McConnell contributed to our knowledge of albumoses in tuberculosis.

It is the later opinion of many like Mery, Heubner, Reyher and French writers that orthotic albuminuria in the young is to be considered a pretubercular manifestation.

Birk found that the children always come from tubercular parentage.

In relation with tuberculosis I must mention a proteinuria of later protein derivatives which give the azo and diazo reactions by the Ehrlich and Giesler test and the modifications by Burghardt, Michaelis, Bondi, etc. They all consist in the use of sulphanilic acid or paramidoacetophenon.

By a more or less so far unknown process, oxyproteic substances (according to Spath, Bodzinsky, Gottlieb and Cloetta), most likely sulfodiazobenzols, give the well known colors and sediments, both of which by Becker, Lowinson, Ehrlich, Michaelis were considered of prognostic value. It may

be of interest to mention that Williams discovered lately that the African race does not respond to this test.

It is hardly within the scope of this paper to discuss the fact that Fränkel found the differentiation between caseous and croupous pneumonia possible by this reaction. DeGrazia and Petzl claimed it to be a sign of mixed infection in tuberculosis. Opinions differ as to the prognostic value. Some found it to be of such unfavorable significance that the positive reaction excluded the sufferer from sanatoria. It is found to be a serious prognostication by Michaelis, Damen, Lowinson, Wood, Upson, Holmgren and Williams. Wildstrand went so far as to consider even only one positive reaction as serious. Burghardt, Clemens and Von Ruck consider it not always of bad prognostic value; while Babcock mentions the fact that the reaction is often absent in advanced cases even with formation of large cavities.

On the other hand Petri, Penzold, Becker and Badden consider it of no prognostic importance, and the researches made in Vierordt's Clinic by Tunker, seem to prove its relative unimportance. Having considered separately the different causative factors, we come to the conclusion that they all have a certain relationship amongst themselves and depend partly upon each other. We are not before such a puzzle as it seemed at first; at any rate, we are absolutely justified in rejecting the extreme views of Millard and Osler, and accepting the fact that proteinuria can occur within the normal functions of the kidneys and within the general construction of the term "good health." If we find proteinuria in the sick, we have to assure ourselves, if we can exclude first organic lesions in the kidneys by absence of organized deposits.

This is of the greatest importance with our tubercular patients.

Walsh reported at last year's National Congress on Tuberculosis that he found in cases of pulmonary tuberculosis, albumin in the urine, by heat and acetic acid, in forty-seven per cent. of all cases. He gives the autopsy reports of the Henry Phipps Institute, the Philadelphia Hospital, The Pennsylvania Hospital and his private practice. Of these fully 55% showed tubercular nephritis in some form. Therefore, albumin in the urine of the tubercular, which is of large molecular structure, is of grave pathognomonic importance.

In the case of a febrile, anemic or marantic condition, we must observe the amount of exercise taken, because under these circumstances, merely getting up may mean as much as a prolonged march for the healthy; and it cannot be our desire to overtax such a person.

It is well to remember the emotional case of Filipowitch, in which, after night's rest, the urine was free; and take into consideration the anxiety, worry and homesickness which aggravates so often our tubercular patients, especially when the surroundings are not congenial.

We furthermore have to direct our attention to the diet, especially when we attempt to build up tissue, as is frequently empiric in the treatment of tuberculosis. The indiscriminate forced feeding with raw eggs and other proteins may be the source of filling the circulation with waste products, of which the proteinuria will be an indicator, and which in course of time must be followed by metabolic disturbance, which in turn will reflect upon the general condition by lowering the recuperative value of the blood plasma.

Then again, if we have to deal with an

infiltrated organ, we will discover the proteoses of smaller molecular structure, the so-called polipeptides of Fischer, which give partly the biuret colors, as soon as recession of the infiltration begins. On the other hand, the presence of the finer bodies, of which we know so little and the presence of which we discover only by the diazo reaction, will show the presence of later protein derivatives and often a serious septic condition which only in rare cases cannot be demonstrated otherwise.

Again, if we find no causative factor like exercise, faulty diet, or organic disorder, we ought to look for a diathetic condition which may alter the physio-chemic structure of the protein-molecular in circulation, be it uric acid, oxalic acid or chlorin or what Senator calls "a predisposition," or Leube, "an abnormal porosity to proteins."

In conclusion: In regard to orthotic albuminuria we are unable to give any chemical test an exclusive significance. Our chemic means so far are too limited. Orthotic albuminuria is of apparently obscure hematogenetic or functional origin of various natures. Therefore, every case has to be considered individually and treated accordingly. *Orthotic proteinuria merits our attention only as a manifestation, not as a disease.*

(Biography continued in next issue.)

TONSILLITIS: WITH REPORTS OF SOME RARE FORMS SELECTED FROM RECENT LITERATURE.

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The object of this paper is not to present a complete resume on tonsillitis but rather to point out some of the rarer forms of this disease. The importance of a thorough comprehension of the anatomy of the

tonsils, constitutes my reason for embracing its contemplation as a preface to this paper. "The tonsils are two glandular organs, situated one on each side of the fauces, between the anterior and posterior pillars of the soft palate. They are of a rounded form, and vary considerably in size in different individuals. Externally the tonsil is in relation with the inner surface of the superior constrictor, which separates it from the internal carotid and ascending pharyngeal arteries. It corresponds to the angle of the lower jaw. Its inner surface presents from twelve to fifteen orifices leading into small recesses, from which numerous follicles branch out into the substance of the gland. These follicles are lined by a continuation of the mucous membrane of the pharynx, covered with epithelium; around each follicle is a layer of closed capsules imbedded in the sub-mucous tissue. The capsules are analogous to those of Peyer's glands, consisting of adenoid tissue. No openings from the capsules into the follicles can be recognized. They contain a thick grayish secretion. Surrounding each follicle is a close plexus of lymphatic vessels. From these plexuses the lymphatic vessels pass to the deep cervical glands in the upper part of the neck. The arteries supplying the tonsils are the dorsal linguae, ascending palatine, tonsillar, ascending pharyngeal, descending palatine and a small branch from the small meningeal. The veins terminate in the tonsillar plexus on the outer side of the tonsil. The nerves are derived from Meckel's ganglion and from the glosso-pharyngeal. The establishment of facts as to the physiological function of the tonsil has not been accomplished." Goodale¹, believes that one of its offices is to arrest and destroy pathogenic

micro-organisms. The extent to which it is capable of this is limited, as shown by the following cases to be reported in this paper. It is readily seen by the foregoing anatomical outline, that the tonsils by their position in the throat are, so to speak, a culture tube for the myriads of cocci, bacilli, etc., that are inspired by every individual. It is also noteworthy that the follicles are surrounded by a net-work of lymphatics, opening into those of the neck, and from there to all parts of the lymphatic system. Another fact of no little significance is the number of arteries supplying the tonsils. If this organ requires this amount of blood supply, is it not reasonable to suppose that it is of low resisting power? These three characteristics, its position in the body, its intimate connection with lymphatic plexuses, and its low power of resistance, leads me to believe, that the cases to be cited in this paper are true primary tonsillar disease, with secondary general infection. It is now a conceded fact that the faucial tonsils may serve as atrium of infection for a number of diseases, as acute articular rheumatism, endocarditis, pleurisy, acute osteomyelitis, actinomycosis, various forms of general sepsis and tuberculosis. That the gravest general septic infection may take its origin from the tonsil without the formation of tonsillar or peri-tonsillar abscess, or other conspicuous lesion is shown by the following case of Adler²: "A healthy baby, one year old is suddenly taken with high fever 105 F., careful examination shows nothing. The next day a very slight follicular tonsillitis becomes apparent. The tonsils are not swollen, but show merely a moderate congestion of a few small follicular patches. No pseudomembrane is formed nor is there any glandular involv-

ment. Within forty-eight hours of the onset of the fever the urine becomes loaded with albumin and contains numerous renal epithelia and casts of all kinds, and a few red blood cells. The high fever continues, the curve being of a distinct septic type. The spleen gradually enlarges, profuse diarrhoeas set in. The tonsils have long since become perfectly normal; no other organic lesions are evident. With the fever varying in intensity, but always of a strongly remittent character and with steadily increasing weakness the child dies of exhaustion after three weeks. The autopsy showed intense nephritis with multitudes of microscopic pus foci. In the small intestines particularly the ileum, localized ulceration with necrosis. The spleen enlarged and congested and in a condition of acute inflammation. The liver shows some fatty degeneration and beginning focal necrosis. There is no endocarditis, a very moderate congestion of the lung and some bronchitis. The spleen and the heart blood gave staphylococcus aureus in pure culture. From the kidneys besides abundant colonies of staphylococcus the colon bacillus was also obtained. The Widal reaction had proved negative during life and typhoid bacilli could not be cultivated from the stools, nor could it be obtained from the intestine after death. There appears no reason to doubt that the staphylococcus entered the system in this case through the tonsil and that so very slight a tonsillitis as we saw here was sufficient to cause a fatal general sepsis. Although staphylococcus infection through the tonsil is very rare, streptococcus infection starting in this organ is a comparatively frequent occurrence. Two cases, one of Adler³, and one in my own practice will suffice to show its general

manifestations. Adler's case is as follows: "A woman about forty up to now entirely healthy, is suddenly taken sick with sore throat, high fever up to 104 F., and general symptoms usually associated with this condition. When I saw the case there was continuous high fever, rapid pulse, great prostration and rapid breathing. The faucial tonsils were much swollen and congested and there was a thin grayish pseudomembraneous exudate in long strips covering the tonsils and extending somewhat over the posterior pharyngeal surface. The cervical glands were but slightly enlarged. The rather scant urine contained a moderate quantity of albumin and casts besides plentiful epithelium. There was considerable cough, some sputum, slightly rusty and at the base of the right lung a patch of recent consolidation with bronchial breathing, increased vocal fremitus and numerous moist rales. A culture taken from the tonsillar exudate showed streptococci which were also abundant in the sputum, no pneumococci were found."

As to actual experience I will mention the case of M. H., white, age seven, female. Up to the times of this attack the child was a well nourished and healthy specimen of development. The onset of this illness was sudden, with chilly sensations, and a very sore throat. As the little girl expressed it, she felt as if there was a fish bone in her throat. Temperature 104 F., pulse 130, respiration 28, and great prostration. On inspecting the throat, the tonsils were enlarged, red, swollen and painful when touched. The pharynx and uvula were also hyperemic and swollen. The cervical glands were slightly enlarged and very hard. The conjunctivae were suffused and swollen to a moderate degree. There was alternate blanch-

ing and blushing of the cheeks. The urine was scant and high colored, the bowels constipated, and a sweetish odor was emitted from the mouth during respiration. After four days all of the symptoms disappeared, the child was up and playing but the actual weakness and anemia were out of proportion to the duration and severity of the disease. Microscopic examination of the tonsillar exudate showed streptococci in profusion.

The most pernicious form of tonsillitis is the gangrenous. One case of Richardson⁴ will be sufficient to show the malignancy of this form: "The patient was a man of robust physique, aged forty-five years, addicted to excesses. About ten days before, he had returned from a trip to the north at which time he had been using alcoholics to excess. When he first came under observation of the physician in charge, he had considerable difficulty in swallowing, marked infiltration of the right side of the neck, with other characteristic symptoms of quinsy. In a couple of days it was stated that the patient had a discharge of pus from the nose and mouth, with which there was a subsidence of the swelling in the right side of the neck, a restoration of the normal voice, no further difficulty in deglutition, and the return of the ability to open the mouth freely and widely. About two days thereafter the physician in charge saw what he supposed to be some white spots on the right tonsil. He then thought the case was probably one of diphtheria, although there was a doubt in his own mind as to the diagnosis. On the ninth day of his illness the patient became delirious, and on the tenth and last day of his life I was called in consultation. At this time the patient's temperature was 102 F., his pulse 120, soft and compressible; and he was in a muttering delirium. On

inspection I was impressed by the peculiar odor which was due to sloughing tissue. On depressing the tongue I was quite unprepared for the sight which I observed. On the right side of the tonsil the anterior and posterior pillar and as far down in the pharynx as I could see was one continuous mass of grayish, brownish, putty-like slough. The left tonsil was perfectly normal—there had already been formed a complete line of demarcation between the necrotic and the normal tissue. The patient was *in extremis* and died two hours after I saw him. Before closing this paper I want to call attention to Vincent's Angina, and chronically enlarged tonsils, both of which are apt to be seen by the general practitioner. Vincent's Angina is to be diagnosed by the appearance of a large ulcer on one or both tonsils, the readiness with which it bleeds and the ease with which the ulcer is removed, leaving a bleeding excavated surface. The submaxillary glands are enlarged, the temperature normal or slightly elevated. The microscopical finding of Vincent's bacillus is conclusive. I have seen only one case in my practice, and the history is as follows:

M. S., female, colored, age twenty-two years. On presenting herself she stated that her throat had been sore for two or three days, that swallowing was very painful, but the desire to swallow was constant. On examining the throat, the left tonsil was enlarged, red and swollen, about its center was an ulcer the size of a twenty-five cent piece, the edges were uneven and bled freely when touched with an applicator. A foul odor was present. The tonsil was very sensitive, and the pain was unceasing. The submaxillary glands were enlarged, the voice husky. The temperature, pulse, and respiration were normal. A smear from the ulcer showed the bacillus fusiformis of Vincent. The right tonsil was affected but to a much less degree than the left. The bacillus was found on examining a smear from the right tonsil, they being fewer than in the specimen from the left organ.

In all cases of chronically enlarged tonsils, if of inconvenience to the possessor they should be extirpated as they furnish a nidus for the cultivation of all forms of bacteria, and are therefore a danger to life. In conclusion let me say that we can not build our hopes of success in the treatment of general diseases, on the knowledge of the disease per se, but that every factor that goes to make up a disease must be thoroughly understood, and the concomitant conditions must be given credence as a determining element in the ultimate result.

- 1 GOODALE, Ref. Hand-Book of the Med. Scien. Vol. vii, page 881.
- 2 ADLER, New York Medical Journal, March 31, '06, page 643.
- 3 AADLER, New York Medical Journal, March 31, '06, 643-644.
- 4 RICHARDSON, The Amer. Journ. of the Med. Scien. Oct. '06, page 612.

ERRORS OF THE REFRACTION AND BALANCE OF THE EYES AND THEIR BEARING UPON THE GEN- ERAL HEALTH.

BY

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Since the publication by Professor Donders, of Utrecht, in 1864, of his epoch-making work upon the "Anomalies of Refraction and Accommodation," the science of refraction has been studied and practiced by ophthalmologists the world over; but it is only within comparatively recent years that the subject has been considered in any other light than that of the improvement of the acuteness of vision of the individual for either distant or near ranges, or both. That, however, the accurate correction of errors of refraction must be studied in its bearing upon the progress and cure of a wide variety of the general disease from which much human suffering proceeds, is an im-

¹Read before the Pierson Memorial Medical Library Association, Orange, N. J., 1907.

portant truth which is gradually impressing itself upon the attention of every studious practitioner of medicine with increasing force. Observe that I say the *accurate* correction of errors of refraction.

I had the privilege of studying ophthalmology for many months at the greatest institution for the observation and treatment of diseases of the eyes in the world, and the refraction work done there at that time was of the most perfunctory character. Small errors of refraction—the very ones which—as we are now finding out—are mainly responsible for those reflex disturbances in which the eyes play a part—were not considered worth bothering over; and if anything was said about the fact that in America such anomalies would be duly investigated and corrected we were apt to be told that the phlegmatic Briton was a different individual from the neurotic American. And yet there is no country in Europe which has made such progress in the study of the intimate relationship existing between small defects in the refraction of the eyes and general diseases as has England during the last few years. Continental Europe, so far as it pays any attention to the matter at all, scoffs at the idea, and refuses to believe or investigate. But we need not go abroad to find neglect of this important matter. The large patronage enjoyed by “refracting opticians,” “opticians” and “oculist opticians” everywhere around us shows to what an extent the public is being endangered by men who have as little right to prescribe for defective eyes as the corner druggist for the pains and aches of the body generally. Yet not only do many physicians send their patients to these mechanics for the treatment of defects in what is by far the most delicately

constructed organ in the body; but, what is more amazing, I am acquainted with an oculist of established and wide reputation—one of the old school—who, only a few years ago, saw—and possibly now sees—no objection to a patient going direct to the optician for his presbyopic glasses from time to time without bothering with the ophthalmologist.

Unfortunately, good work in the field of refraction is not always to be obtained even from those rightly supposed to be proficient in that branch. Just as in crowded centres, medicine is practiced by various “specialists” who devote themselves to the exclusive study and treatment of diseases appertaining to various organs, groups of organs, or portions of the body; so in ophthalmology there are many men who are enamored of its operative side and devote themselves to that “specialty within a specialty” with all their enthusiasm; others follow with unusual zeal the interesting pathological and bacteriological problems of the eye; while many are absorbed especially and excel in the practice of refraction. Dr. John Green, writing on this point, says:

“The investigation and treatment of functional disorders dependent upon structural imperfections of the visual organs call for the exercise of the minutest care and often of almost infinite tact and patience. * * * Careless or perfunctory refractive work by an ophthalmic specialist will yield no better results than similar defective work done by persons of inferior scientific attainments and of vastly less reputation.”

This is unquestionably true. There are many men who treat refraction work as if it were a mathematically exact science, and forget altogether the personal equation of the patient. There are others, and not

mean different conditions: First, presence of foreign bodies in the circulation or an altered condition of the proteids of the blood-plasma itself. Each of these possibilities I shall consider separately and fully.

The diffusibility of soluble proteids had been proven by many experiments. Dialysis and diffusion correspond according to Brunton and Traube. Amongst the contributors I mention Rosenstein, Runeberg, Corvisart, Schiff, Brunton, Bernard, Patton, Landau, Graham, Barreswil, Bernhard, Thenard, Dupuytren, Osborne, Hamon, Vogel, Macacchi and others.

Many attempts were made to lay down certain rules for the characteristics of such proteins in circulation which transudate into the urine. Csatory undertook to find a special albumin-quotient by division of the serum-albumin from the globulin, which bears relation to the rapidity of circulation through the glomeruli.

Freund accepted a higher coagulation temperature of these albuminoids than the normal. Fox, Wright, Ross, Kreitl, Hengstenferd, and Tunis believe in deficiency of the coagulating power of the blood and recommend physiologic tests with calcium lactate. Of greater importance is it that Loeb found the Koranyi-index increased and demonstrated a decrease of the NaCl excretion with simultaneous diminution of the quantity of the urine. Of similar opinion was Fuchs.

Of special value were the many experiments of Stöckvis, Brunton, Power, Ott, a. o. These consisted in injecting into the circulation egg-albumin, which afterwards appeared in the urine. Pichler and Vogt found that the injection of casein causes nucleo-albumin to appear in the urine.

This is simply an experimental hemato-poiesis, which in such form is of no value

to us, as being the result of agents from without. Only such conditions which bring about these alterations from within are of importance to us. Faulty metabolism deserves a prominent place. Gubler saw in 1854, after the ingestion of eggs, albumin in the urine. So did Brunton after giving nutritive egg enema. *Such possibilities would arise accordingly every time after the ingestion of a greater amount of albuminous food than the individual can metabolize perfectly.*

This may mean a too heavy meal, over-eating or overfeeding, with disregard to power to assimilate and metabolize. In this sense the following expressed themselves: Barreswil, Bernhard, Thenard, Dupuytren, Osborne, Porter, Hamon, Marcacci, Brunton, Carter, Allard, Weber, Sejournet, Fox, Anders, Kaliski, Weigert, DaCosta, Legendre, Hare, Gray, a. o.

Other factors which bring about such conditions from within besides alimentation are manifold. Rees was the first in 1852 to hint at such factors, followed by Zimmermann, Porter, Wood, Neubauer, Vogel, Wundt, Senator, Semmola, Begbie, Simon, a. o. Malnutrition would belong here and was considered by some as causative. (Simon, Semmola, Poole, Becquerel). Next would be anemia: in fact, Sternberg found transient albuminuria in 3 to 4% of all cases of chlorosis. This was corroborated by Oswald, Schoen, Shattuck, Moxon, Frerichs, Gubler, Edlefsen, Burton and Zeigler. Moxon and Shattuck established a connection between senility and orthotic albuminuria. Verco was of the opinion that the body-temperature in the feeble is causative and explains the disappearance of the albuminuria after rest by the even temperature of the bed upon a feeble organism.

Here, also, belongs partly the appearance

of albuminuria after exercise and bathing by hydration or dehydration of the blood, and such changes in the blood as seen after exposure to Roentgen rays and high frequency currents, as the writer has had opportunity to observe. Other conditions may change the blood plasma. For example, any mechanical means which induces a limitation or reduction of the oxygen in the blood. Pichler and Vogt have brought on traces of albumin by such means and by the temporary obstruction of the femoral and renal arteries. Rendu found the pressure of an ovarian cyst upon the renal vessels to be the cause of albuminuria. Casaretti succeeded by applying bands to the limbs and inverting the position. Seeley did so by constricting the thorax. Johnson believes that the albuminuria after bathing, is due to the pressure of the water when the body is immersed. Palpation has produced the same symptom. (Schreiber, Menge).

Often albumin is found in the new-born, in fact, as far back as 1843, Prout declared this to be normal. Legendre claims that the delayed breathing after difficult labor is responsible for this by imperfect oxydation of the blood. Here I may mention that Semmola produced albuminuria in animals by covering their whole skin with air-tight materials. Guttmann spoke of secretions which find their way into the blood. Of importance may be the internal secretions, especially the sexual glands. I am inclined to consider as such the albuminurias of puberty. (Menstruation—Editorial in *New York Medical Journal*, July 7th, 1906).

How is it then that we do not see the manifestations more frequently, over-eating and over-feeding and malnutrition being of such ordinary occurrence, far more so than we really observe orthotic albuminuria? We have to look further. The next step

would be to look into the circulation and the hemic pressure. Such a factor doubtless exists. It is known that the urine of the new-born often contains traces of albumin. (Flensburg, Sjoquist, Dohrn, Legendre, Prout, Pollack). Aside from a possible blood change, already mentioned, I quote as high an authority as Virchow, who explains such albuminuria by the sudden change in the circulation at birth due to alterations in the hemic pressure with the first respirations.

Skoda was the first in 1851, to launch his theory of venous stasis. He was followed by Traube, Koerner, Stökvis, Brunton, Power, Lang, Ellis, Smith, Ralfe. Brunton and Power based their belief of venous stasis upon the fact that large doses of digitalis made the experimental albumin disappear. The question of high and low pressure was discussed by many. (Landau, Loeb, Smith, Ralfe, Craig, Wiley.) Patton, Douglas and McKenzie accepted high and low pressure.

High arterial tension increases the serum-albumins and low arterial tension the globulins. Wright, Ross, and Fox believe in a diminished hydrostatic pressure in the renal capillaries.

Senator said that by standing, the venous pressure is increased and the arterial pressure decreased. This contradicts Runeberg's statement that the animal membranes are more permeable under low than under high pressure. Edel claims a paradox when he says that such influences which increase the blood pressure in the healthy, lower same in the orthotic. I refer to the articles of Landau, (Osmotic pressure), Senator (Porosity of renal capillaries), Loeb, (Insufficiency of renal vessels), Erlanger, Edlefsen, Lecorché, Talamon, a. o.

Anisometropia—or that condition in which there is a considerable difference in the refraction of the two eyes—is a very prolific source of headaches and analogous conditions. It is not an uncommon experience to find that patients with this refractive anomaly are frequently given glasses which correct one eye only and the other is left to become “amblyopic” or useless; but to completely correct both eyes will, I am convinced, in a majority of these cases insure binocular vision and the vanishing of the troublesome symptoms.

One of the most important considerations in connection with this subject is that which involves the examination of the eyes of school children; and it is gratifying to know that the educational authorities all over the country are becoming alive to the importance of giving every child attending school an equal chance—at least optically. The investigations of trained examiners in Cleveland, O., showed that one in four have eyes which keep them behind in their studies. The examiners at Quincy, Mass., state:

“Many school children who appear dull and inattentive, who are nervous, irritable, morose or disorderly, who suffer from headaches, dizziness, nausea or pains in the eyes, owe it largely or wholly to defects in the refraction of the eyes.” And similar reports come from all parts of the land.

A striking article appeared in the “Ophthalmic Record” a few months ago from the pen of Dr. G. M. Case, of Elmira, N. Y., entitled “Eye-strain and Crime,” in which he reports the results of the examination of the refraction of several thousands of prisoners confined at one time or another in the Elmira Reformatory, and his general conclusion is “that if more

work were done along these lines less money would be needed to build and maintain prisons.”

These, gentlemen, are remarkable statements, and are surely of sufficient importance to demand the fullest investigation. I might go on and quote at length the opinion of a careful English authority that the tendency to suicide is due largely to the mental depression consequent upon uncorrected ocular defects; or elaborate upon the investigations into the relation of eye strain to head tilting and spinal curvatures; or the writings of Musser and others upon the connection between serious gastric disturbances and the presence of eye complications; but I will content myself with giving you an excerpt from an article in the “Medical Record” by Dr. Robert T. Morris. Dr. Morris writes: “A very large group of cases of intestinal fermentation are dependent upon eye strain. These cases are perhaps quite as often overlooked as any others, but as soon as we have all become familiar with the external signs of eye strain fewer cases will go to the surgeon with the diagnosis of abdominal disorder. Those that I see are sent to the office most often with the request to have the appendix examined, because the distension of the caecum is apt to cause more pain than distension of other parts of the bowel and attention is attracted to this region. If there are external evidences of eye-strain these cases are referred to the ophthalmologist along with my cases of nervous dyspepsia and gastric neuralgia, and some of the most brilliant results that I have observed in any kind of medical practice have come out of the treatment that was instituted.”

It would be impossible for me in the limited time at my disposal to go into the

whole question of the relation which is borne to the subject under discussion by defects in the balance of the extra-ocular muscles of the eyes. These twelve delicately acting muscles have been shown by a series of experiments by Landois and Veness to be capable of a minimum contraction of 1-800 of an inch, indicating a marvellously delicate sensitiveness; and their accurate balance in the orbital cavities while fusion of the images of the two eyes is successfully accomplished without strain is a most important accompaniment of the visual act. The study of anomalies of this balance has been greatly developed in recent years and their responsibility for many of the products of eye strain clearly established. Briefly I may say that I am in accord with the practice which, having thoroughly worked out the refractive errors and imbalance of the ocular muscles, first fully corrects the ametropic conditions; second, if asthenopia still continue, incorporates with the spectacle lenses the weakest prisms which will restore the muscular balance; and, third, these measures failing, seeks to re-establish orthophoria by operative measures. Too much importance cannot be ascribed to the investigation and correction of refractive errors in the young; for it is then that proper treatment will not only relieve the conspicuous symptoms but will in the majority of instances straighten an eye already deviating from its proper visual direction, cause anomalies of the muscular apparatus to become practically negligible and save many an eye from the sad fate of the amblyopic.

It is far from me, gentlemen, to suppose that in this necessarily superficial review of an extensive and interesting topic I have convinced you that all the claims put for-

ward in behalf of a somewhat novel therapeutic measure are well grounded; but if I have awakened an interest where it did not previously exist or tempted you to put to the proof any of the statements made, I will feel that the labor has not been in vain. It would be an easy matter—though a rather wearisome one, I fear, to recite the details of illustrative cases almost without number which would point the moral of the statements which I have made to you this evening; but I will be content to inflict upon you very brief notes of three cases from my own records.

CASE I. A lady, married, aged 24, sent to me by her family physician on account of "panorama headaches" which had rendered life miserable and made it impossible for her to sit out a performance at theatre or concert, so that all such forms of diversion had long been given up. Neither could she look at any active passing scene without extreme suffering, accompanied by nausea. She had been drugged lavishly without effect, but the correction of a compound hypermetropic astigmatism with oblique axes brought her instant relief; and she reported to me a month ago—four years after her first visit—that since she had put on her glasses she had scarcely had a twinge of headache.

CASE II. To illustrate the point made by Dr. Weir Mitchell that in many cases the eyes are not placed under suspicion because the sight is good: A lady of 25, a musician, of delicately sensitive habit, was sent to me in 1904, by her physician, who had been trying for two years to cure her of violent attacks of "neuralgia." Both physician and patient seemed to think that it was grasping at the last straw to seek the cause of the trouble in the eyes. The seizures were of such severity that frequently the patient had to remain in bed for two days at a time with cold compresses applied to the head, in an attempt to relieve the torture she suffered. I was informed by her brother, a solid and reliable business man, that there was no exaggeration about his sister's story, that she certainly was a martyr to these

neuralgic attacks, and that hysteria had no bearing upon the case, he felt confident. The nose had been extensively operated upon, a spur and portions of the turbinated bodies removed, but the symptoms continued unabated. Finally a much more serious operation was being debated when it occurred to the family physician to have the eyes examined. The visual acuteness was remarkably good, 20-15 in each eye; but with the accommodation paralyzed a slight compound hypermetropic astigmatism revealed itself:

R + .12 Sph = + .25 Cyl. ax. 90

L + .13 Sph = + .25 Cyl. ax. 100

I explained to the patient that these glasses were to be worn constantly and faithfully—not for the purpose of improving the sight; for possibly she might see more clearly in the distance without them, but to compel the “focussing muscles” to act normally. The result was that after the first week or so, during which the eyes rebelled against the new order of things, absolute comfort in the use of the eyes ensued, and the neuralgic attacks were things of the past.

CASE III. Which has interested me intensely: On Oct. 3rd last there came to me from one of New York's most prominent surgeons a young girl aged 10, from Western Pennsylvania, whose mother related the following history: In January 1906, shortly after an attack of scarlet fever, the child began to complain of the eyes hurting and feeling tired. She was taken at once to a well known oculist in a neighboring city, who said that he could find nothing wrong with the eyes. She then began to have periods during which the sight would vanish and the pupils dilate widely. She was taken to another oculist, who reported—as did his predecessor—that the eyes were all right. In July, attacks of sudden and severe pain with mydriasis came on, and the child suffered so intensely from photophobia that head and eyes were buried in a pillow to obtain relief. In August, she was attacked with convulsions, nausea and vomiting; after which she was once more taken to the oculist who had first seen her. He expressed the opinion then that she had inflammation of the optic nerve and retinitis; and found that there

was some astigmatism. He thereupon ordered these glasses:

R. + 1.25 = + .50 C. 180. v. 20-30

L. + .50 = + .75 C. 180 v. 20-30

The use of these brought no relief, and the mother was then told that the child had brain tumor, and was advised to bring her to New York for operation. Thus she came to the surgeon above referred to, who thought it might be wise to have her eyes examined again. Under atropine there appeared a simple hypermetropia of plus 2.25 with no astigmatism, the fundi and media entirely normal, the muscle balance perfect. I prescribed plus 1.75 R. and L. and advised their constant use. I saw the patient on January 3rd this year, the mother reporting that she had enjoyed perfect health since putting on her new glasses, and that there had been no return of her symptoms.

“One swallow does not make a summer,” but the recital of even one such case as the above should at least suggest to us that the role which eye strain plays in the causation of functional disease is surely not unimportant.

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COMPLICATIONS AND SEQUELS OF MEASLES.*

BY

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The following report is based on a series of 457 cases admitted to the Philadelphia General Hospital from January 1st, 1904, to February 15th, 1908:

As a rule all descriptions of measles embrace under the heading “Complications and Sequels” many of the phenomena more properly considered as symptoms. The disease may be said to be complicated, how-

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ever, when the usual concomitant manifestations or other morbid processes are unduly developed.

Measles more than any other of the acute infectious diseases may be considered the disease of complications for there are very few cases which do not show either some distinct complication or aggravation of some one of the usual manifestations. This applies more properly to the disease as encountered in institutions or under bad hygienic conditions. In well nourished children and in those belonging to the better classes complications are not nearly so frequent and the death rate is low. In spite of the common belief that measles is a harmless affection every care should be exercised to prevent children under 3 years of age from acquiring the disease, for it is in these very young children that the great majority of the fatal cases occur.

Of the total 457 cases, 264 were males and 193 females; 423 were white and 34 colored.

The following table shows the age incidence:

Under 1 year	50
1—2 years	65
2—3 "	44
3—4 "	41
4—5 "	36
236	
5—6 "	53
10—15 "	17
15—20 "	25
Adults	90
Age not given	37

A glance at the table shows that over half (56 per cent.) of the cases of known age were under 5 years of age. The number of adults was very large (21 per cent.). Three of the adult cases were over 40

years of age; two of them stated that they had had an attack of measles in childhood. Of 349 histories in which this point was investigated 11 contained the statement that the patient had had a previous attack of the disease. The value of such statements, however, is doubtful.

The following table shows the racial distribution:

Russians	130
Poles	22
Italians	56
Germans	16
Irish	43
American born	143
Negroes	34
Race not determined	13

Small ship epidemics are liberally represented in this series; 86 (14 per cent.) of the cases were brought directly to the hospital from the immigration station. Instances in which 5 or 6 cases were received were common and once as many as 12 were taken from an incoming vessel. At least 90 per cent. of these immigrant cases were of Russian or Polish extraction and in nearly every instance they were young children. The Italian cases on the other hand, numbering 56, were, with 2 or 3 exceptions, young male adults.

The difference existing between the ages of the Russians and Italians is in part explained by the fact that very few Italians enter this port and the few that do are adults. The occurrence of so many cases developing on ship board would seem to indicate that the source of the infection is in the vessel although I am informed that whenever cases of measles develop the vessel is disinfected on entering port.

EYES. Next to the respiratory system complications referable to the eyes occur

with the greatest frequency. Marked injection of the conjunctiva, associated with photophobia, was noted in 178 cases (39 per cent.). In 29 (6.3 per cent.) there was a purulent discharge from the eyes and in 8 of these cases the eye lids were edematous and swollen. Marginal blepharitis was noted in 9 (1.9 per cent.) and hordeolum in 3 (.65 per cent.). The only serious sequel noted was the occurrence of a corneal ulcer. There was no bacteriological study made of the contents of the conjunctival sac. Shottelius (*Müncher med. Wochenschr*, 1907, p. 378) in a bacteriological study of the conjunctivitis occurring in measles found that there was a difference between the findings in the fatal cases and those ending in recovery. In the fatal cases the streptococcus was a common finding and was infrequent in the cases that ended in recovery. This point is of some interest because bacteriological studies which have been made in some of the fatal complications (pseudo-membranous laryngitis, broncho-pneumonia and empyema) have shown the great frequency of the streptococcus. The finding of the streptococcus in these fatal cases has led to the suggestion that possibly this organism plays much the same role, as a secondary invader, in measles that it does in scarlet fever.

EARS. The occurrence of an otitis media is not unusual and in common with some of the other complications and sequels varies greatly in different epidemics. It has been noted in as high as 50 per cent. of cases. A mild degree of inflammatory change in the middle ear is said to be present in a large percentage of cases if it is carefully sought for. In this series otitis media was noted in 5 (1.1 per cent.).

RESPIRATORY TRACT. Complications ref-

erable to the respiratory tract are of great frequency and but few cases escape some aggravation of the phenomena usually present. The importance of the respiratory complications becomes apparent when we consider that in this series 385 (84.2 per cent.) cases had some involvement of the respiratory tract.

Coryza is properly a symptom of the disease and practically every case has it. In a small percentage of cases it is purulent in character; 15 (3.28 per cent.) presented this complication. The lips were swollen and fissured in 13 and in 6 there were superficial excoriations on the upper lip due to the irritating nasal discharge.

Acute congestion of the mucous membrane of the mouth, pharynx, uvula and tonsils is also characteristic of the disease. Not uncommonly, however, this mild inflammatory condition becomes unduly severe and may give rise to considerable discomfort. In 39 cases (8.53 per cent.) the pharynx was greatly congested giving rise to pain, while the tonsils were noted as being markedly inflamed and were swollen or contained follicular patches in 13 (3 per cent.).

In common with the rest of the upper respiratory tract the *larynx* is also the almost constant seat of inflammatory changes. In the great majority of cases these changes are mild and produce no symptoms. Severer grades of inflammation of the larynx are not unusual, however, especially in children in institutions, and when they occur must always be looked upon as serious. The severer forms of laryngitis are characterized by a croupy cough, dyspnea and huskiness of the voice. In this series 15 (3.26 per cent.) presented symptoms of severe laryngitis. In two it was of the

pseudo-membranous type; both required intubation and both ended fatally. This severe form of laryngitis may be due to the streptococcus or to a complicating diphtheria. The prognosis is desperate. The high death rate exacted by this complication is illustrated in an epidemic reported by Granlon (quoted by Welch and Shamberg). Among 1,633 cases membranous laryngitis occurred 235 times; and out of these 235 patients, 218 died.

The *trachea* may be involved alone or in association with the bronchi; 76 (17 per cent.) cases had a marked cough without any associated pulmonary signs. The cough in these cases may have been due to a laryngitis or to involvement of the trachea and larger bronchi.

Bronchitis while commonly classed as a symptom possesses such power for mischief that its presence must always be viewed with apprehension, particularly in children in institutions. Cases scattered throughout both lungs were noted in 169 cases (37 per cent.).

In every epidemic of measles and in every statistical study concerning the disease the striking feature is usually the frequency and the fatality of *broncho-pneumonia*. All the other complications of measles combined do not approach broncho-pneumonia as a cause of death. Henoch has called attention to the importance of this complication and states that even when some other complication is the apparent cause of death patches of broncho-pneumonia can be demonstrated at the autopsy table. This fact is also emphasized by Holt, Northrup and others.

In children under three years of age broncho-pneumonia is frequent and by far the most common cause of death.

In this series broncho-pneumonia was noted in 54 cases (11.8 per cent.) and in 43 (79 per cent.) of these it proved fatal. Doubtless not a few of the cases considered as having bronchitis alone had an associated broncho-pneumonia which escaped detection.

But little information was gained in this study as to the relation existing between *tuberculosis* and measles. It is a well recognized fact, however, that the relation is particularly close. In some instances the measles stirs into activity existing tuberculous foci with the result that the patient dies of some acute tuberculous process, and an acute miliary tuberculosis, a tuberculous broncho-pneumonia, or a tuberculous meningitis; 2 such instances were noted in the present series and in a tuberculous adult the pulmonary symptoms were greatly aggravated by an attack of measles.

In other instances the tuberculous process develops some months after an attack of measles in the form of hip-joint disease, caries of the spine or a pulmonary tuberculosis. The association here is doubtless due to the widespread catarrhal changes which render the individual particularly susceptible to infection with the tubercle bacillus, if exposure occurs at this time. As to the frequency of tuberculosis as a late manifestation this series furnishes no information as it is practically impossible to follow the cases up.

HEART. Cardiac complications must be classed among the very rare manifestations of measles. Even when present they usually depend either on some complication or pre-existing lesion. In but 12 cases (2.6 per cent.) was there noted anything abnormal about the heart and in 4 of these there was a pre-existing valvular lesion.

In 6 all associated with broncho-pneumonia, the heart was irregular. In 2 there was a functional murmur.

KIDNEYS. In marked contrast to scarlet fever measles is rarely complicated with a serious kidney lesion. In the present series a urinary examination was made in 178 cases. With but few exceptions but one examination was made and this usually on admission during the height of the eruption or during the stage of desquamation. The urine of 108 (60.7 per cent.) of these cases showed no abnormality whatever; in 41 (23 per cent.) there was a trace of albumen; 23 (13 per cent.) had albumen and casts (hyaline and faintly granular); and 6 (3.3 per cent.) showed the presence of casts alone. There was no instance of a marked acute nephritis. Just how much significance should be attached to the presence of a trace of albumen and hyaline casts is problematical. Such findings are not conclusive evidence of a true nephritis in adults and even less so in children. Still it must not be forgotten that the transient irritation produced in the kidney, even by the milder of the infectious diseases, may later develop into a true nephritis. That there is an appreciable number of nephritides with such an antecedent history is the belief of some.

Vaginitis was noted in 3 cases.

GASTRO-INTESTINAL TRACT. Redness of the mucous membrane of the mouth is characteristic of the disease and is to be noted in every case. In 14 (3 per cent.) this stomatitis was noted as being more than usually severe; in 4 small superficial ulcers were noted on the buccal mucous membrane and in 1 there was thrush. Vincent's angina occurred in 5 cases (1.1 per cent.).

The gangrenous form of stomatitis will be considered under noma.

Glossitis of a moderate degree was noted in 3 and in one case there was an ulcer on the under surface of the tongue.

Ileocolitis constitutes one of the major complications of the disease and is especially prone to occur in weak and poorly nourished children. This complication is also more frequently seen in the summer months. In common with other complications it is very frequent in some epidemics while at the other times it rarely occurs. The stools are bilious in character, often green, and in all cases very fetid. *Ileocolitis* was noted in this series in 22 cases (4.9 per cent.); of these 12 recovered and 10 died. In 8 of the fatal cases there was in addition a broncho-pneumonia. Nausea and vomiting occurred during the course of the disease in 11 cases (2.4 per cent.).

NOMA. This is one of the worst complications occurring in the course of measles. Under ordinary conditions it is rare. It is generally believed that the predisposing causes are poor nourishment and bad hygienic surroundings. The series of cases reported by Blumer and MacFarland (*Amer. Jour. Med. Sc.*, Nov., '01) is noteworthy for two reasons: 1st, the high percentage of cases (9.2 per cent.) and 2nd, the absence of the commonly accepted predisposing causes. The cases numbered 16 and occurred in an epidemic of 173 cases, giving a percentage of 9.2. The mouth alone was affected in 4, the mouth and other parts in 3 and in the remainder the vulva, rectum and other parts. Of the 7 fatal cases broncho-pneumonia was the direct cause of death in 5.

In this series there were 6 cases (1.3 per cent.). In 5 the mouth alone was af-

fected and in 1 the groin. One of these cases was noteworthy in that the lesion was bilateral and involved nearly the entire face. Death occurred in 5 of the cases, broncho-pneumonia being the predisposing factor in one. Of these 6 cases 5 have already been reported by Rosenberger (*N. Y. Med. Jour.* 1907) who made a thorough study of the bacteriology of the condition. He states that "the bacterial flora observed in all the cases was so similar that a general description will suffice. Foremost and most abundant was the spirillum and fusiform bacillus of Vincent; next in frequency were diphtheria-like organisms, streptococci, staphylococci, and, in a couple of cases, pneumococci. The fusiform bacillus and the spirillum of Vincent were the most abundant organisms present in the smears."

The bacteriological studies so far made indicate that no one organism is the sole cause of noma. In the beginning the infection is due to a single organism but later becomes a mixed one.

ADENITIS. Enlargement of the superficial lymphatic glands is commonly noted. In this series marked enlargement of the cervical glands alone was noted in 14 instances; in 26 the cervical, axillary, epitrochlear and inguinal glands were noted as being enlarged. If enlargement of the superficial glands was specifically looked for in every case the percentage would no doubt be much higher.

SKIN. Complications referable to the skin are not of very frequent occurrence. Herpes labialis was noted in 5 cases (1.1 per cent.), furunculosis occurred once, masceration of the skin about the ankles in 2 and in 5 there was abscess formation (angle of the jaw, thumb, scalp, sacrum, leg). In this connection it might be noted

that there were two cases with recent surgical wounds in which measles developed. The wounds healed by first intention.

NERVOUS SYSTEM. Although headache and backache are commonly complained of by adults and older children at the onset of the disease, other symptoms referable to the nervous system are not common. In 22 cases (4.8 per cent.) the headache was complained of throughout the attack. In 5 a severe convulsive seizure occurred at the onset and in 4 severe convulsions occurred just prior to death; in 3 of these cases death was due to broncho-pneumonia and in 1 there was a tuberculous meningitis. Delirium was noted in but 4 cases and in 2 of these there was an associated broncho-pneumonia.

MEASLES ASSOCIATED WITH OTHER INFECTIONS. There was no instance in this series of measles and one of the other infections occurring together. Measles developed as an attack of *whooping cough* was subsiding in 6 cases and immediately followed *diphtheria* in one and *typhoid fever* in one.

In 6 instances the attack of measles was followed by *diphtheria*. Measles developed two or three days after labor in two instances. There were no untoward effects in either case.

Mortality. Of the 457 cases 57 died (12 per cent.). The fatal cases, with one exception, occurred in children under 5 years of age. Considering children under 5 years alone the mortality was 21.5 per cent. The only death occurring beyond the fifth year was in an Italian boy of 17.

The following table shows the causes of death:

Broncho-pneumonia	43
Noma	5

Membranous laryngitis	2
Ileocolitis	2
Tuberculous meningitis	1
Tuberculous broncho-pneumonia	1
Diphtheria	1
Congenital syphilis	1
Not determined	1

**REPORT OF A CASE OF TRAUMATIC
RUPTURE OF DESCMET'S MEM-
BRANE WITH REMARKS ON
DEFECTS OF THAT MEM-
BRANE.¹**

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A Turkish laborer, about 25 years of age, presented himself at the Cornell Dispensary because of an injury to his right eye. He was unable to speak English, but by means of signs was able to communicate the information that he had been in a fight and had been struck in the eye with a fist. The cheek and side of the nose were swollen and discolored, and the eye was red, with a small subconjunctival ecchymosis below the cornea. With the other eye covered he indicated that he was able to see clearly with the injured eye. The pupil was normal and responded to light. The dioptric media was clear and the ophthalmoscopic examination revealed no abnormality. By reflected light several short, slightly curved, double-contoured lines were seen in the deeper layers of the cornea on the temporal side. They were seen with difficulty by oblique illumination. No change was observed in the corneal epithelium. A diagnosis of "Multiple Rupture of Descemet's Membrane" was made and treatment advised. The patient returned four days later

and the lines had entirely disappeared. There was no corneal opacity. Vision was normal and the subconjunctival hemorrhage was nearly absorbed.

So far as the writer is aware, this is the first case reported which was due to external violence, (not obstetrical), all of the other cases of defects of Descemet's membrane being due to distension of the globe from within, either with or without inflammatory conditions. The cases may therefore be classified as follows:

DEFECTS OF DESCMET'S MEMBRANE.

1. Mechanical—(A) External violence. (a) Natal (obstetrical). (b) Post natal. (B) Internal (intraocular) pressure.
2. Inflammatory.
3. Maldevelopment.

(1) Fissures in Descemet's membrane were first discovered microscopically by Recker in 1875, and were described by Haab clinically in 1889. Seefelder, however, was the first to prove that mechanical measures (increased intra-ocular pressure) were the cause of these lesions in Descemet's membrane and its lining endothelium. These ruptures have been observed in cases of high myopia, keratoconus, mega-lo-cornea, primary glaucoma, or glaucoma secondary to intra-ocular tumors (usually bliomata), hydrophthalmos, and after obstetrical injuries. It is unnecessary to tabulate these cases and authors, as Wintersteiner has given a complete review up to 1896, and Coats has continued it up to the time of publication of his paper.

The *characteristics* of these ruptures are: fine double-contoured lines in the deeper layers of the cornea. They are usually pointed, may divide dichotomously, are frequently arranged parallel to each other, though they may be distributed irregularly,

¹Read before the Academy of Medicine, Section on Ophthalmology, February 17th, 1908.

and may be curved and arranged concentrically to the sclero-corneal margin. The corneal epithelium is unbroken. If the endothelium remains intact there is no corneal opacity as was shown in a case reported by Wintersteiner but usually the endothelium suffers too and imbibition of aqueous by the corneal tissues causes swelling and opacity.

Special and related forms. Certain of the cases of myopia reported by Bickerton, Fleischer and Wood had some enlargement of the cornea and should probably be classed with the case of megalocornea or hydrophthalmos.

In Wood's case and in one of Stephenson's there was high myopia in only one eye and it is curious to note that the fissures were only found in the myopic eye.

It is not a long step from these beginning corneal ruptures to the complete ones reported by Fuchs. He describes 17 cases of small peripheral rupture of the cornea, usually traumatic and frequently complicated with prolapse of the iris. In my case there was simply a rupture of the elastic lamina while in Fuchs' cases the whole thickness of the cornea was involved.

So-called "spontaneous rupture of the cornea" is closely allied to these cases. Houdart reports a case of this kind and has collected 4 similar ones. His patient had glaucoma and while stooping at his work had sudden and severe pain with escape of blood from the eye. On examination a horizontal linear rupture of the cornea was found.

Similar also to the writer's case are those cases observed by Majewski. Single or multiple and parallel linear opacities were observed in the deep layers of the cornea after injury by blunt force. The author ascribes them to foldings of Descemet's

membrane such as are seen after cataract extraction and generally termed "striped keratitis."

Discoloration of the cornea by blood pigment has long been an ophthalmological curiosity. Trauma of the eye causes hyphema with subsequent discoloration of the cornea. This has been shown to be due to deposits of hematoidin crystals in the interlamellar spaces. For a long time it was supposed that the blood in the interior chamber, either unchanged or disintegrated was carried by lymph streams into the corneal canals via Fontana's spaces and Schlemm's canal. Von Hippel has recently pointed out that the entrance of blood between the corneal lamellae probably occurs through tears in Descemet's membrane, allowing direct entrance of blood into the corneal structures. Thus will be easily explained why the center of the cornea is so deeply pigmented and the discoloration diminishes toward the periphery.

Obstetrical injuries to the cornea require special mention. Thomson and Buchanan say that obstruction in the maternal passages during the second stage of labor, compression by forceps or by both combined, may cause injury to the cornea. They classify them as follows: (1) Diffuse opacities (temporary) and (2) Linear opacities (permanent). The former are due to edema, while the latter are caused by rupture of the posterior elastic lamina with formation of connective tissue. These are often diagnosed later as congenital leucomata. Fejer, Stephenson and others have reported cases of ground glass opacities of the cornea at birth, but with no sign of injury or interference with the corneal epithelium. Peters examined the eye of an infant that was injured at birth and re-

moved three weeks afterward. Several lacerations of Descemet's membrane could be demonstrated microscopically. Von Hippel also reports a case due to birth injuries. Kraemer reports a case of congenital pigmentation of the cornea. It was brownish, spindle-shaped and was located in the deep layers of the cornea and was probably due to rupture of Descemet's membrane with deposition of blood pigment in the corneal stroma.

The *cause* of these fissures is usually increased intra-ocular pressure. In the case just reported the pressure was increased by the violent blow on the elastic coats of the eye, communicating the energy to the vitreous which, reacting on the cornea, caused these fissures. In the cases of hydrophthalmos, glaucoma, kerato-conus, etc., the constant, long-continued, increased tension causes a stretching of the ocular tunics, the cornea included, and rupture of Descemet's membrane results. Local or general pre-existing weakness of the tissues may or may not be presupposed.

The *age* at which this condition has been observed is noteworthy. Most of the cases have been infants or young persons or the initial features of the disease have begun while the patient was still young. Most of Fuchs' cases with complete, small ruptures of the cornea occurred in young persons. In elderly people, rupture of the sclera usually results from trauma. It is possible that the lamina vitrea is less resistant in the young than in the old.

The *frequency* with which clefts in Descemet's membrane appears is relatively infrequent though it is possible that this condition has escaped the observation or interpretation of oculists. Altogether only about 20 writers have reported cases of this

kind. Wintersteiner observed fissures in four out of 32 cases of glaucoma, eight of which had enlargement of the cornea. Reis found ruptures in 5 out of 7 cases of buphthalmos. In the eyes of 9 children with hydrophthalmos, Seefelder found them in all when examined microscopically. Coats reports 14 cases of buphthalmos examined with the microscope, all with positive findings. In two cases of glaucoma secondary to glioma they were found but in six other cases of glioma there were no ruptures, but there was also no stretching or enlargement of the cornea. There were no defects in four cases of high myopia.

The *persistency* of these fissures is variable. When due to external violence and without injury to the endothelium the defects may close in a few days, as in the present case. If the endothelial cells are disturbed there is usually some opacity of the corneal stroma due to swelling from absorption of aqueous. Faber has found these lines unchanged after 22 years.

The *symptomatology* is practically nil and must necessarily be so if we consider the class of cases in which these defects are found. With the exception of the present case all have been observed in eyes already blind or with very poor vision. The cases of Axenfeld and Terrien are the only ones on record in which the rupture of the lamina vitrea was accompanied by distinct clinical symptoms. Axenfeld's case suffered with an acute painful exacerbation of the kerato-conus while Terrien's patient had pain with sudden impairment of sight and ectasia of the cornea. Probably the protrusion of the cornea would not have occurred had the cornea been of normal thickness. In eyes with good sight and normal corneal tissue we may predict impaired vision due

to disturbed optical conditions if the rupture occurs over the pupillary area and when the corneal stroma has become opaque and swollen by imbibition of aqueous.

The *results* of these fissures are both visual and visible. These clefts interfere with the proper transmission of light and so the visual acuity is more or less diminished. This is more marked when opacity results from absorption or the interposition of connective tissue. The cases of myopia in which these lines were observed were from 10 to 15 dioptries with astigmatism of from 5 to 12 dioptries. In two cases the lines were at right angles to the greatest curvature of the cornea and the writers believed the astigmatism was due to the rupture of Descemet's membrane. In one case the lines were parallel to the axis of least curvature. The opacity which often accompanies these fissures varies from a faint macula to a dense, ground-glass appearance. When absorption of blood has taken place the cornea looks reddish brown.

The *pathology* has already been indicated. A break is seen in Descemet's membrane and this layer may remain flat or be curved either toward the cornea (as it is most frequently) or into the anterior chamber. Sometimes extensive separation of the layer is observed. The endothelial layer may be lacking or may be restored. In some cases the lamina vitrea has been replaced under the new endothelium. This was found in a case of keratoconus due to glioma and was examined by Alt. It was clinically diagnosed in a case of keratoconus by Terrien. Three vitreous layers were found in one case on the site of the repaired rupture, a condition which was explained as being due to the repair of a second rupture. It is an interesting fact that Uthoff found

these fissures of the lamina vitrea in a piece of cornea excised for keratoconus. Salzman has also found defects in Descemet's membrane, especially in the region of the limbus, but he does not think they play an important role in the production of keratoconus. In cases of rupture of Descemet's membrane, Bowman's layer may also be injured (and frequently is) without any disturbance of the corneal epithelium.

Experimentally, Coats was unable to reproduce this condition as the globe naturally gave way at some other point, usually in the sclera. The age of the animals employed may have had something to do with the negative results and there may also have been a relative difference in the thickness of the cornea and sclera of the animals experimented upon as compared with human eyes. Even in human eyes traumatism more often results in scleral than in corneal rupture. In attempts to produce glaucoma by electrolysis the aqueous with steel needles, Erdmann caused conditions approximating hydrophthalmos. Increased tension lasted five months while the animals were under observation, and in all of them typical ruptures of Descemet's membrane were found.

As to *diagnosis*, Seefelder says that the clefts in Descemet's membrane were usually characteristic but that defects in Bowman's membrane could not be recognized clinically with certainty. By the aid of reflected or oblique illumination, double contoured lines may be seen in the deeper layers of the cornea. On the red background of the pupil as seen by reflected light they look like fine hair lines connected in pairs at the ends, which are pointed. A peculiar change in their appearance is caused by rotating the reflecting

mirror. They may or may not be associated with corneal opacity. It is claimed they can be stained by fluorescein but this is probably true only when the endothelium is affected. If the endothelium remains intact or repair has taken place no discoloration would be caused. Owing to the complication of ruptures of Bowman's membrane it may be that the discoloration would be situated in the anterior rather than in the posterior layers. The names given them by different writers suggest their appearance. Bickerton calls them "canal opacities"; Axenfeld and Fleischer liken them to "spun glass"; Wood compares them to "crackled glass"; Stephenson says "like cracks in ice or flaws in glass"; Haab describes them as "a thread of Canada balsam on a glass slide," a description which is characteristic. The lines are usually parallel (though they may be irregularly arranged), more or less concentric to the corneal margin, and with or without corneal opacity. Linear opacities, especially after traumatism, should suggest them. In all cases of increased tension, especially in the young, with myopia, keratoconus, glaucoma, buphthalmos and intra-ocular tumors these lines should be looked for. When these diseases are accompanied by sudden pain, diminution of vision and corneal opacity, rupture of Descemet's membrane may be suspected.

Terrien's *treatment* of his cases of keratoconus with rupture of the elastic lamina and ectasia of the cornea consisted in performing median tarsorrhaphy. This resulted in gradual and complete cure due, as he believes, to re-establishment and cicatrization of Descemet's membrane. The possibility of this reparative process has been proven by Alt microscopically. The ra-

tionale of treatment seems to be, then, rest, support to the cornea by tight bandaging or median tarsorrhaphy and the use of eserine or pilocarpine to diminish intra-ocular tension.

The inflammatory (2), and mal-development (3) type of cases will only be considered briefly and chiefly by a short review of some pathological findings.

Lauber's cases of peripheral ectasia of the cornea were accompanied by inflammatory signs which Schmidt-Rimpler believes were of a chronic form. Von Hippel ascribes them to an endogenous infection, while Fuchs believes they are of ectogenic origin. This controversy is interesting in view of the following cases. Dimmer describes a case of interstitial keratitis with concentric, double contoured lines parallel to the sclero-corneal margin. Stock examined an eye with recent parenchymatous keratitis. Descemet's membrane was eroded and leucocytes penetrated the corneal tissue in different places. A case of interstitial keratitis which had been completely cured was also examined and dehiscences were found in the elastic lamina with destruction of the neighboring corneal lamellae. Endothelium and new formed elastic membrane now filled the gaps. He considers the defects in Descemet's membrane to be secondary and caused by necrosis with the keratitis as the exciting cause. He admits, however, that in certain cases there may be an injury to the endothelium with subsequent infiltration of the cornea which would only produce a temporary opacity in the normal eye but in cases of hereditary syphilis would cause parenchymatous keratitis. Von Hippel speaks of such erosion as "ulcus internum." He also shows that the first disturbance in parenchymatous keratitis is a

loss of endothelium of Descemet's membrane. Elschmig found the endothelium atrophic or absent in similar cases but he believes these changes are secondary as it has not been demonstrated that toxic influences reach the corneal structures through the aqueous. Stanculeano also defends the "ulcus internum" theory. A case of congenital staphyloma of the cornea is reported by Runte. Corneal tissue had been entirely replaced by scar tissue and no evidence was left behind of Bowman's or Descemet's membrane. These are evidently due to intra-uterine inflammation of bacterial origin, but whether ectogenous or endogenous is unknown. Bacteria have been demonstrated in a few cases of congenital eye diseases. Seefelder and others have reported cases of congenital opacity of the cornea. In a case of nodular keratitis Schmidt-Rimpler reports that fluorescein produced a greenish discoloration in the depth at the periphery of the cornea, indicating a local defect of the endothelium of Descemet's membrane. Parsons quotes Von Hippel as stating that it is simpler to have recourse to inflammatory changes producing degeneration in the endothelium and destruction of Descemet's membrane than to rely on maldevelopment or perforation. "The only way to decide the origin of such defects is by a study of the fetal eye."

(3) A certain number of cases appears to be due to improper development of the anterior portion of the eye, the most common of which is a failure of the anterior chamber to form. The iris and lens rest against the posterior surface of the cornea interfering with its proper nutrition and formation. Peters has described a case with disc shaped opacities of the cornea which were observed at birth. Descemet's

membrane, the endothelium and part of the posterior corneal layers were deficient. This condition he believes was caused by the pressure of the lens against the posterior surface of the cornea during the development of the structure. Parsons reports a case of congenital anterior staphyloma. Collins believes such cases to be due to a lack of development of the anterior chamber. On the contrary, Von Hippel believes these cases are due to an active inflammatory process which takes place during the last months of fetal life in an eye already fully developed. In an examination of microphthalmic pigs' eyes by Kitamura there was an absence of Bowman's and Descemet's membrane, the lens occupied the anterior chamber and the lens capsule was adherent to the posterior surface of the cornea. It is evident that these cases require considerable research before their etiology can be cleared up.

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NASAL OBSTRUCTIONS.

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It is the purpose of this paper to discuss the subject of nasal obstructions with the particular object in view of calling attention to the fact that these obstructions play an important part in the causation of disease not only in the head, but in other parts of the body; that these obstructions are of importance further on account of their frequency, and the infrequency with which they are taken into account by practitioners generally.

The functions of the nose are concerned with respiration, olfaction and phonation.

In normal respiration the air enters the nose where it is filtered, heated and moistened in preparation for its entrance into the lower respiratory tract. At the same time odors and irritants to the mucosa are detected.

During phonation the nasal chambers serve the purpose of resonators, increasing the volume of the tones produced by the larynx and adding to their quality.

The turbinates serve as hot water radiators in warming the current of air which passes over them. They are masses of erectile tissue surrounding the turbinated bones and are covered with mucosa, richly supplied with muciparous glands.

While heat is being radiated moisture is given off from the nasal secretions and by transpiration. Not a little heat and moisture come from the accessory sinuses of the nose. These sinuses, comprising the frontal, ethmoidal, sphenoidal, maxillary and the lachrymal sac, which may be included with them, drain into the nasal cavity.

To properly moisten the air which enters the lungs requires the secretion of about

In cases of painful heel for which no ordinary cause can be found, it is important to bear in mind the possibility of a gonorrheal origin. Even if no urethritis exists, massage of the prostate and vesicles may reveal the presence of gonococci, and thus give a clue to the proper treatment.

a pint of moisture a day. The importance of moisture in inspired air will be appreciated when we remember that moisture is a necessity to the osmotic process which takes place between the blood and the air in the alveoli of the lungs. The nasal secretions are also important in that they exert a restraining influence on bacteria and wash away the germ laden dust which may lodge on the mucosa.

The nasal chambers are richly supplied with blood vessels and nerves and are exceedingly sensitive to circulatory reflexes. Behind the nasal chambers is the pharynx, opening into which are the eustachian tubes.

An important structure in the pharynx is the mass of lymphoid tissue known as the ring of Waldeyer. The ring of Waldeyer is made up of the masses of lymphoid tissue commonly called the pharyngeal tonsil, a prolongation of which at the opening of the eustachian tube is known as the tubal tonsil; the faucial tonsils, and the mass at the root of the tongue known as the lingual tonsil. It will be noted that these structures form a ring around the opening of the upper respiratory tract. They drain into the deeper lymphatics of the neck, and are of great importance clinically as avenues of infection.

In considering the significance of nasal obstructions it is necessary to bear in mind the functions which are thereby impaired and the pathological consequences of such impairment.

Obstructions either partial or complete produce a marked change in the tone of the voice. The lack of resonance, the dull thick tone and the peculiar twang are familiar to all. It is a waste of time to attempt vocal training under such conditions.

It is as impossible to get a good tone with obstruction of the resonators provided

in the nasal chambers as it would be from a horn battered and bent out of shape. Obstruction to the normal air passage interferes with the drainage and ventilation of the accessory sinuses and the eustachian tube.

The secretions of the sinuses when deprived of oxygen are prone to decomposition. The passage of the air current past their openings into the nasal chambers produces a partial vacuum which favors drainage. Without this assistance the drainage is imperfect. The drainage is further impaired by pressure and occlusion of the normal openings.

The hyperemia induced by the presence of adenoids in the region of the opening of the eustachian tube sets up tubal catarrh. Decomposition of retained secretions sets free irritants which excite hyperemia and thus further increase obstruction. The mouth breathing due to adenoids in children, whose tissue are in a plastic state, results in deformities of the palate, face and chest.

In mouth breathing the throat and upper respiratory tract are exposed to cold dry air. The irritation which results from this renders the tissues especially vulnerable to the direct infection from the germ laden dust which should have been removed by the filtering process of normal nasal breathing. Infective material thus received is readily picked up by the lymphoid structures of the Waldeyer ring which have become degenerate through prolonged exposure to irritation. The tonsillar tissues pass the infection on to the deeper lymphatics with which they are connected.

It is well known that much of the tubercular and rheumatic infections gain entrance in this manner. A degenerate tonsil is a constant invitation to infection. In-

fection of the pharyngeal and tubal tonsils are chiefly responsible for infections of the eustachian tube and otitis media. Obstruction of the nasal opening of the lachrymal duct produces epiphora. The retained secretions may decompose and become infected setting up dacryocystitis, and infections of the eye.

As stated before the nerve and blood supply of the nasal cavities is very susceptible to reflexes. By reason of this fact the pressure and irritation from nasal obstruction are frequently concerned in the production of reflex disturbances of the eye and ear and the lower respiratory tract.

It is also interesting to note here that certain areas of the nose, the so-called genital spots are associated with pelvic pain, which disappears when the spots are cocaineized. It is not within the province of this paper to discuss the relation of functional disturbances of reflex origin to the structural lesions which follow them. Suffice it to say that there is an abundance of evidence to show that a reflex disturbance, say of nasal origin, manifesting itself in a cough, may so impair the resistance of the affected part that it will become susceptible to structural lesions.

In children the most frequent cause of nasal obstruction is adenoids. This term is applied to hypertrophy of the pharyngeal and tubal tonsils, which under normal conditions, undergo a gradual process of atrophy, and disappear at puberty. The function attributed to these structures is that of being a germinating center for leucocytes. They are very vascular and are easily irritated. In many cases there is a hereditary tendency to their hypertrophy and degeneration.

The diagnosis of adenoids is very simple. The child presents the familiar picture of

mouth breathing, snores in his sleep, takes cold easily, is subject to ear ache, and, if the growths are large is liable to be mentally dull. A post nasal discharge is common. The tonsils are usually sharers in the hypertrophy and degeneration and the cervical lymph nodes may be enlarged from infections which have entered through the lymphoid ring. Passing the finger up behind the soft palate the growths may be felt "resembling a bunch of earth worms," as Meyer described them. There can be no more foolish advice than that frequently to be had that the child will outgrow the trouble.

It is true that the tissues tend to atrophy and disappear at puberty, but in the meantime the child has been exposed constantly to infection at a very vulnerable point, has not had the normal respiratory function and has developed a post nasal catarrh of a very obstinate type. There has been constant risk of infection of the middle ear, with the probability of deafness and possibility of mastoiditis and brain infection. The child has been rendered more susceptible to infections of the respiratory tract, such as pneumonia, tuberculosis, measles and whooping cough. The cervical lymph nodes have been in constant danger of infection, leading to cervical abscesses, rheumatic infection and endocarditis.

With these possibilities and probabilities in view there ought be no question about the necessity of early thorough removal of adenoids.

As the faucial tonsils are usually affected in cases of adenoids they should be extirpated also, removing all of the diseased tissue.

Intumescence of the turbinals is a common cause of nasal obstruction, more especially in young adults. The erectile tissue is

in a state of chronic dilatation, producing a swollen condition of the turbinal which is reducible by pressure or the application of cocain or adrenalin. The application of caustics is in general use to produce permanent contraction of the venous spaces, but the writer prefers the saw knife operation described by him in the December, 1907, issue of AMERICAN MEDICINE.

True hypertrophy of the turbinals is not reducible by pressure or ischaemics. It calls for excision of enough of the hypertrophy to permit of free breathing and to relieve pressure and obstruction of the openings of the accessory sinuses if present.

Polypi are usually associated with ethmoid disease, starting as the result of oedema of the mucosa in inflammations of that region. Their removal should be accompanied by thorough drainage of the ethmoid cells when infection is found.

Intra nasal tumors call for extirpation.

Deflection of the nasal septum has the effect of obstructing the nasal chamber into which it deviates. It should be straightened by appropriate operation. Of the numerous operations devised for this purpose the writer favors the submucous resection of the deflected cartilage and bone. Associated with deflections of the septum may be found spurs, which should be sawed off or removed submucously.

The things to be attained in all the operative work used in the treatment of nasal obstruction are free ventilation, removal of obstruction to drainage and relief of pressure.

The object of this paper has been to outline the causes of nasal obstructions and their effects in the perversion of the normal functions, with especial reference to general health.

The following cases will illustrate some of the points which have been brought out:

1. Baby A. Age three years. Has been under the observation of Dr. M. since birth. Has been subject to colds on slight provocation for a year or two. Gets feverish, is irritable and fusses a great deal in her sleep. Snores in her sleep, and breathes through the mouth when awake. Has had several attacks of ear ache, and is at present slightly hard of hearing. The clinical picture points to the presence of adenoids, and the child is referred by Dr. M. for operation. The diagnosis is confirmed by palpating the mass of adenoids with the index finger passed up behind the soft palate. Operation under general anesthesia using Gottstein curette followed by fingernail removes the obstructing mass. Since this time the child has been free from the disagreeable symptoms and is in good health.

2. C. B. Age seventeen. Consulted me for deafness of several years' standing. Can hear only very loud conversation. Is naturally bright, but has a very stupid look which would be a serious drawback in securing a position. Sits with his mouth open. Has poor memory and difficulty in holding his mind to his work. Has had several attacks of otitis media. Examination reveals large mass of adenoids. These were removed under local anesthesia, producing an almost instantaneous improvement of the hearing. His general health picked up rapidly and the hearing recovered was normal. The mental condition of the patient was transformed.

3. J. A. Referred by Dr. K. for severe phlyctenular inflammation of the left eye, which had resisted ordinary treatment. Examination of the left nostril shows excoriation of the naris and obstruction due to deflection of the septum and turbinal hypertrophy. Removal of the nasal obstruction relieved the nasal irritation behind the phlyctenular trouble which speedily cleared up.

4. Miss L. Consulted me about her eyes. Had a great deal of pain and other asthenopic symptoms, which were partly relieved by correcting her refractive error. Pain is severe when she catches cold, localizing in the frontal region. Examination

of the nose shows enlarged middle turbinals which are interesting with the drainage of the frontal sinus, and causing reflex ocular pain by pressure on the nerve supply of that region. Complete relief was given by removal of the anterior end of the turbinals under cocain.

5. E. K. Age sixteen. Mouth breather. Subject to frequent colds. Examination of nose shows large lower turbinals which shrink well under adrenalin, permitting of free respiration. Submucous destruction of the engorged venous sinuses with my saw knife produced contraction of the turbinals which has given relief and remained permanent for two years.

6. R. W. Age twenty-two. Has been under the treatment of Dr. M. for a few weeks for an obstinate cough. Has suffered from this for several years and has "taken barrels of medicine" with little benefit. Dr. M. suspects reflex cough. Examination shows large turbinals which press against the septum nasi. Nose is very irritable. Patient is a mouth breather. Had frequent attacks of tonsillitis. Had tonsils cut with tonsillotome about ten years ago. Has left a good sized mass of degenerate tonsillar tissue on either side. Under cocain enough turbinal tissue was removed to insure free breathing space, and later the tonsils were extirpated. The patient picked up in health rapidly. The cough ceased and he feels like a new man.

7. Mrs. P. Has been subject to asthmatic attacks at irregular intervals. Varying treatment had produced no results. Removal of polypi attached to the anterior end of the middle turbinal solved the problem.

Lacotah Building.

In persons suffering with enlargement of the prostate in its early stages, exposure to cold often causes sufficient congestion of the gland to prevent the patient from passing his urine. Under these circumstances a hot sitz bath and hot applications to the region of the bladder, as well as a hot enema, should always be tried before recourse is had to catheterization.—*Int. Jour. of Surgery.*

LITERARY NOTES.

American Health is one of the latest additions to journalism, and while modest, it bids fair to fill an important place. It is the official mouth piece of the American Health League, an outgrowth of the Committee of One Hundred on National Health. The enormous increment in the interest of an intelligent public in health matters, bespeaks a warm reception for *American Health* and we trust it will fulfil its worthy mission faithfully and well. The present issue certainly raises our hopes and *American Medicine*, while extending to *American Health* the right hand of fellowship most heartily wishes it success.

Another recent and notable contribution to current Medical journalism is the Fitz Festschrift issue of the *Boston Medical and Surgical Journal*. This fine old journal that has been so long a credit to the New England profession and incidentally has conferred no little glory on American physicians in general, never honored itself more than in honoring Dr. Fitz. Wherever scientific conservative medicine is known and taught, the name of Reginald Fitz is respected. His contributions to medicine have been many and valuable and this Festschrift number of a strong conservative journal is a fitting tribute to his work. It marks well one more milestone on the great highway of scientific achievement.

The second number of *The Archives of Diagnosis* is before us, and hard as was the task, it surpasses the first. All of the many fine papers it contains are valuable and interesting but Chevalier Jackson's, Chas. Lyman Greene's and H. W. Bettman's are especially noteworthy. The full page frontispiece of bronchoscopic views is a splendid bit of color work. If is hard to see how the profession can fail to avail themselves of this altogether useful journal.

ETIOLOGY AND DIAGNOSIS.

The Significance of the Indican Reaction.¹—The following rules are submitted by Houghton. 1. Urinary indican is a product of intestinal putrefaction. There may be putrefaction without the production of indol, but there can be no indicanuria without putrefaction. 2. A maximum excretion of indican, of 100 or more on Frolin's scale, indicates excessive intestinal putrefaction, and the consequent intoxication. 3. A maximum reaction with an index under 100 may be significant, but its interpretation should be guarded by the oxidizing and excretory capacity of the patient. 4. A heavy indican reaction which subsides under treatment indicates intoxication to a lesser degree, but minor variations in the color index have no significance with our present knowledge. 5. No interpretation can be placed upon a negative reaction, as there are too many unsolved factors in the problem.

Drug Eruptions²—W. S. Gottheil considers this subject and gives the following list of the more commonly used drugs that occasion dermatoses, and their usual manifestation on the integument:

a. Boric acid. Externally, general erythema.

b. Carbolic acid. Externally, dermatitis of varying intensity, even going on to gangrene.

c. Chrysarobin.—Externally, hyperemia erythema, papular, pustular, furunculoid, or erysipelatosus dermatitis.

d. Pyrogallol. Externally, dermatitis of varying severity, even to ulceration and sloughing.

e. Salicylic acid and the salicylates. Externally, vesicular eczematous eruption. Internally, general erythema, urticarial, papular and even petechial eruption.

f. Bromine and the bromides. Internally, acne most commonly. Less frequently, a tubercular eruption on the extremities.

Rarely an urticarial, erythematous, or furuncular general eruption.

g. Iodine and the iodides. Externally, dermatitis of varying grade. Internally, acne commonest; tubercular eruption, usually on the extremities, rarer. Occasionally an erythematous, papular, urticarial, vesiculo-bullous or even gangrenous exanthem.

h. Sulphur. Externally, a general papular or scarlatiniform eruption; eczematous inflammation.

i. Tar and its compounds. Externally, an erythematous, papular or vesiculo-pustular eruption; acne.

k. Morphia and its compounds. Internally, general pruritus, general erythema, an urticarial or papulo-vesicular eruption.

l. Iodoform. Externally, acute dermatitis of varying degrees of severity.

m. Mercury and its compounds. Externally, dermatitis, and especially a suppurative folliculitis of the hairy parts; a general eruption of scarlatiniform type, or even petechial or gangrenous lesions. Internally, may cause the same lesions.

n. Copaiba. Internally, a papulo-vesicular general eruption, often resembling German measles.

o. Cinchona and its alkaloids. Internally, a general urticarial, erythematous, papulo-vesicular, bullous, or petechial efflorescence. Scarlatiniform rash.

p. Chloral. Internally, a general erythematous, papulo-vesicular or petechial rash.

q. Belladonna and its derivatives. Externally and internally, fugacious scarlatiniform rash; a papulo-vesicular eruption more rarely.

r. Balsam of Peru. Externally, an eczematous eruption or dermatitis.

s. Arsenic. Externally, intense eczematous inflammation, going even to gangrene. Internally, an erythematous, papular, urticarial, pustular, or ulcerative eruption; brown pigmentation in spots; localized keratosis; carcinoma.

t. Nitrate of silver. Internally, diffuse grayish to steel black pigmentation, especially on exposed parts.

u. Antipyrin and its congeners. A general fugacious, urticarial eruption.

¹H. A. Houghton, M. D., *Am. Jour. of Med. Sciences*, April, 1908.

²W. S. Gottheil, M. D., *Archives of Diagnosis*, April, 1908.

TREATMENT.

The Prophylactic Treatment of Puerperal Eclampsia.¹—However divergent the views regarding the curative treatment of eclampsia may be, there is universal accord concerning prophylaxis, says Moran. It consists of hygienic, medical and dietetic measures. Good pulmonary ventilation, nourishing and easily digested food, frequent bathing, moderate exercise in the open air, proper clothing, the avoidance of fatigue and exposure to cold, are the principal hygienic measures to be employed.

The frequency of eclampsia could be greatly diminished if more careful supervision of the pregnant woman was exercised. The perfunctory examination of the urine for albumin, during the latter weeks of pregnancy, is not sufficient; the total amount of solids excreted in twenty-four hours should be ascertained. The constitutional signs and symptoms must also be scrutinized closely. When intoxication exists, as manifested by slight digestive disturbance, headache, etc., the regulation of the bowels and restriction of the diet will usually suffice. Persistent headache, vertigo, uncontrollable vomiting, disturbance of vision, insomnia, and neuralgia, showing involvement of the nervous system, will call for more vigorous and active measures. Free purgation, hot baths, absolute milk diet and rest in bed should be enjoined. Diuretics are of secondary importance and of little use until the bowels and skin have been acted on freely.

The medical treatment will vary according to the indications of the individual case. If there be pre-existing cardiac disease, or chronic nephritis, remedies appropriate for these diseases should be used. In the former digitalis, strophanthus, strychnia and other heart tonics are serviceable, while in the latter nitroglycerin is of inestimable value. In the acute nephritis of toxemia our chief reliance should be on free catharsis and diaphoresis. Mercurials, followed by salines, hot-air or plunge baths, followed by envelopment in blankets, rectal injection

of salt solution frequently repeated, citrate of lithia and caffeine, and an abundance of water, are the agents that have proved very successful in our hands.

If, in spite of vigorous treatment, the volume of the urine is not increased, and the excretion of urea remains stationary or diminishes, together with persistence of menacing constitutional symptoms, it will be necessary, particularly if the fetus is viable, to terminate the pregnancy.

The Treatment of Fracture of the Patella.¹—The ideal method of treatment of fracture of the patella now that nearly perfect asepsis can be obtained, is the open operation and wiring, says Verbyrycke. This is the only method by which bony union can usually be obtained. A longitudinal or transverse incision is made over the fracture, and the exudate, hæmorrhage, and tabs of tissue thoroughly cleaned out of the joint. It is preferable to wash the joint out with hot, sterile salt solution from a nozzle, and the fingers should not touch the parts any more than is positively necessary, all handling being done with instruments as far as possible. The fragments are brought together and held in position by two silver wire sutures passed through holes bored obliquely through the dorsal surface and edge of each fragment. The torn periosteum is united with heavy catgut, the tear in the lateral expansion of the tendon with kangaroo tendon, and the wound closed. A posterior splint is applied. As soon as the skin wound has healed, and the sutures have been removed, the knee is encased in a light plaster of Paris cast. This is split in a few days, and removed every day to allow light massage of the joint. In three weeks the patient, still wearing the cast, may walk with crutches, and in a month passive motion should be practised. The cast should be worn during the day for three months.

Good results with bony union are obtained by this method in about ninety-five per cent. of the cases, while the operation itself has scarcely any mortality in the hands of good operators.

¹John F. Moran, M. D., Washington, D. C., Jour. A. M. A., May 2, 1908, p. 1411.

¹J. R. Verbyrycke, M. D., New York, N. Y. Med. Jour., April 25, 1908, p. 788.

NOTES ON MODERN PHARMACEUTICAL REMEDIES.

Introduction—In the justifiable use of remedies for the restoration of health or the alleviation of the symptoms of disease, the fundamental requisites are intelligent observation, careful investigation, and logical deduction. Indeed, application of any remedy to a diseased condition without the fullest appreciation of the object for which it is employed, and the fullest comprehension of the remedial action desired, is not only unscientific, but positively reprehensible. The human organism is assuredly widely variable, and not one, but numerous factors enter into every therapeutic equation. Many of these factors are ill-defined or obscure, and this fact of necessity enforces a certain degree of uncertainty in every case. Unconsciously many physicians are prone to group their cases and treat all patients as belonging to various types, rather than as individuals. Thus empiricism creeps in, and since empiricism is the line of least resistance, it rapidly becomes a habit in the hurry and routine of every day practice. But such a habit is always a confession of weakness or neglect, and is to be deprecated, not only because of its very tangible dangers, but because it so evidently stands in the way of real therapeutic progress.

Recognizing, therefore, the paramount importance of individualization in modern therapy—the treatment of patients rather than of generic diseases—the necessity for full and complete knowledge of *first*—pathological conditions and processes, and *second*—the remedies to be applied, needs no argument. It is conceded that a physician primarily should be skilled in the diagnosis of disease, which entails intimate knowledge of physiological processes, the manifold deviations from the normal to which they are subject, and the etiologic factors concerned therein. Secondly, that he should be skilled in the treatment of disease, which requires thorough knowledge of the measures he employs, their character, action, and probable or usual effect. Without such knowledge and its intelligent application, the practice of medicine becomes dangerous, if not injurious to all concerned.

Within the past few decades there has been very substantial progress made in

chemistry and pharmacy, with the result that the medical armamentarium has been enormously increased. Many of the additions to the *Materia Medica* have proven disappointing, and have naturally become more or less obsolete, but not a few have justified their existence, and won a well-defined place in the treatment of disease. If this latter was not so, it is certain that they too would have passed down and out, for it is not only irrational, but an insult to the medical profession to assume that any remedial agent will be repeatedly and continuously employed, unless it accomplishes the results sought in at least a fair majority of instances.

Granting then that pharmaceutical products are subject to laws akin to that of "survival of the fittest," the fact still remains that a physician not only cannot, but certainly should not try to utilize more than a few of the many at his command. Just as in selecting any drug or combination of drugs for administration to meet the needs of a patient, the intelligent painstaking physician will carefully consider the adaptability and therapeutic fitness of every pharmaceutical product he uses. He will strive to see not how many, but how few products he can employ to obtain the desired results. Better by far to use a few well—than many indifferently.

But to avoid all too prevalent tendencies to routinism, and to keep apace with the progress and experience of others, the broad liberal physician should familiarize himself with many remedies, whether he uses them or not.

It is therefore, with the earnest effort of supplying such information that the work of this department has been undertaken. *The physician is entitled to know the character, source, action, incompatibles, uses and contra-indications of modern pharmaceuticals, and to get that information from sources not interested in their manufacture, sale or exploitation.* The descriptions which follow are absolutely unprejudiced, and to the best of our knowledge true statements of fact.

In no instance is it to be understood that this department is recommending or exploiting any product. The facts are submitted as accurately and plainly as possible, and the individual physician must decide whether in his judgment he can or cannot

use with advantage to his patients any product or products described. He, and he alone is the one who decides, and the responsibility is his.

Few men will deny that honest, non-secret pharmaceuticals are entitled to at least the respectful consideration of every thoughtful medical man, and if they seem valuable, in that they represent research and new discoveries, or higher quality and purity, and accomplish certain desired results with greater promptitude, safety and certainty than anything else, it is little less than negligence not to know and use them. But if they fail in these various essential attributes, no wise and sensible physician will jeopardize his reputation and success by continuing to employ them. Utility, honesty and clean methods must more than ever from now on characterize preparations for which the attention of an awakened profession is sought. Unreserved credit is due the American Medical Association for its part in such awakening, and the general movement for non-secrecy, and accuracy of statement deserves every support.

ALYPIN.

Description—A white crystalline powder, easily soluble in water. It is a synthetic product, chemically representing a monohydrochloride of benzoyl-1. 3 tetra-methyldiamino-2-ethylisopropyl alcohol.

Action—Locally on mucous membranes and open wounds it is anesthetic. Internally it is analgesic and sedative. On the unbroken skin it has little if any action.

Uses—As a substitute for cocaine for local anesthesia in ophthalmological, rhinolaryngological and aural work, general surgery, dentistry, etc. Internally in cardialgia, vomiting, ulcer and cancer of the stomach, and as an addition to cough mixtures.

Dosage—For anesthesia, same strength solutions as cocaine are recommended. Internally $\frac{1}{8}$ to $\frac{1}{2}$ grain. May be combined with adrenalin.

Special Considerations—Compared with cocaine Alypin has the following advantages: it is much less toxic and solutions may be sterilized by boiling. Does not cause dilatation of the pupil, increase intraocular tension, or paralysis of accommodation

when used in the eye. Also differs from cocaine in that it produces a slight and transient hyperemia instead of vaso-constriction.

References—Articles by Professors Wendell C. Phillips, Willy Meyer, J. R. Winslow, Schleich, Braun, Selfert, Wintersteiner and others.

Incompatibles—Nitrate of Silver is incompatible with Alypin.

Manufacturers—Farbenfabriken of Elberfeld Co., New York City.

ANUSOL SUPPOSITORIES.

Description—Cone shaped rectal suppositories, each suppository weighing a little over 3 grams. Furnished in cartons of 12.

Formula—Anusol (Iodo-resorcin-sulphonate of bismuth) 7.5 grams (112 grains), Zinc. oxid. 6.0 grams (90 grains), Balsam. Peruv. 1.5 grams (22½ grains), Ol. theobrom. 19.0 grams (5 grains), Ungt. cerat. 2.5 grams (40 grains), M. Ft. Suppos. No. 12.

Action—These suppositories are claimed to be non-toxic, non-irritant, and through their astringent and sedative action to allay inflammation and promote retrogression of dilated hemorrhoidal veins. They seemingly exert some laxative effect, for the contents of the rectum if hard and scybalous are softened and more easily passed.

Special Considerations—Anusol is decomposed by moisture and vivid light; combined with fats, however, it keeps indefinitely, and hence it is supplied only in the form of suppositories. They contain no narcotic drugs.

Therapeutic Indications—Recommended in all pruritic and painful conditions of the rectum and adjacent organs, as in the various forms of hemorrhoids, especially those appearing during pregnancy and the puerperium; in catarrhal affections of the rectal mucosa, chronic proctitis, prolapsus, rectal ulcerations, tenesmus, thread-worm; in pruritus ani, fistula in ano, anal fissure, after ano-rectal operations; in vaginitis, pruritus vulvae, dysmenorrhoea; in vesical irritation, enuresis nocturna, prostatic hypertrophy, for atony of the lower bowel, etc.

Directions for Use—Introduce one suppository at bedtime only in ordinary cases, but severe ones require in the beginning a suppository night and morning. If the bowels move within half an hour another suppository should be inserted.

Bibliography—Bjorkman, Merck's Archives, June, 1904. A. T. Halstead, Med. Progress, Oct., 1904. S. Lewis, Med. News, May 30, 1903. S. A. Buchanan, Med. Summary, Oct., 1900. G. T. Palmer, Chicago Clinic, April, 1903. W. A. Young, Can. Jour. Med. & Surg., Sept., 1900. T. H. Newland, Med. Examiner, August, 1904. Westlake, N. Y. State Jour. Med., Oct., 1905. A. DeVoe, Med. Progress, April, 1903. C. W. McIntyre, N. A. Jour. Diag. & Pract., Nov., 1901.

American Agents—Schering & Glatz, Maiden Lane, New York City.

ASPIRIN.

Description—A white, fine crystalline powder of acid reaction, easily soluble in alcohol and ether, almost insoluble in cold water. Decomposed in solution.

Formula—Chemically, Aspirin is a monoaceticacidester of salicylic acid.

Action—Owing to its insolubility in acid fluids, Aspirin passes unchanged through the stomach and is decomposed in the intestine with the liberation of salicylic acid. Said to possess the antipyretic, analgesic and antiseptic properties of the salicylates with less disturbing effect upon the stomach, and depressing action upon the heart and nervous system (tinnitus, headache, etc.)

Uses—Recommended in all conditions in which the salicylates are indicated, such as acute rheumatism, myalgia, chronic rheumatic affections, gout, arthritis, deformans, neuralgia, influenza, tonsillitis, etc. Said to be efficient as an antipyretic and anodyne.

Dose and Manner of Use—Dose equivalent to that of salicylate of sodium, 5 to 15 grains (0.3-1.0 gm.) best given in capsules or wafers or carefully prepared tablets, or dry on the tongue followed by a swallow of water, or stirred in a little sugar water.

References—Articles by Prof. W. H. Thompson, New York; Dr. R. T. Williams, F. R. C. P. Manchester, Eng., Dr. A. Haig and Dr. A. P. Luff, London; Prof. Ewald and Prof. Senator of Berlin.

Incompatibles—Aspirin is incompatible with alkalis, and therefore should not be administered simultaneously with them or alkaline mineral waters.

Manufacturers—The Fairbenfabriken of Elberfeld Co., N. Y. City.

PINUS CANADENSIS—(Dark).

(S. H. Kennedy's).

Description—An aqueous non-alcoholic extract of Pinus Canadensis, containing about 15 per cent. of glycerine.

Formula—To each fluid ounce is added 0.48 grains of thymol.

Action—On mucous membranes this product is astringent and mildly antiseptic.

Special Considerations—Claimed to be prepared from specially selected drugs and of especial concentration and uniformity. Non-alcoholic.

Dosage—*Internally*, 5 to 15 minims every two or three hours preferably with alkalines. *Externally*, in solutions ranging from 1% to full strength as indicated by presenting conditions.

Uses—*Internally*, Pinus Canadensis (Kennedy) is said to be serviceable in diarrhoea, dysentery, hematemesis, and whenever a gastro-intestinal astringent is indicated. *Externally*, it is recommended for hemorrhoids, fissures of the anus, the declining stages of gonorrhoea, vaginal catarrh, pharyngitis, follicular tonsillitis, and wherever an astringent solution is advisable.

References—The late Prof. J. Marion Sims, New York Medical Gazette, July 1st, 1871. Dr. W. Walker, Medical Record, November 1, 1871.

Incompatibles—Acids particularly.

Manufacturers—Rio Chemical Company, 79 Barrow Street, N. Y. City.

CHOLOGESTIN.

Description—A liquid preparation.

Formula—Amorphous Sodium Salt of the Natural Bile Acid (Glycocholic Acid) gr. 4, Sodium Salicylate (from natural oil of wintergreen) gr. 5, Pancreatin (U. S. P. Standard) gr. 10, Sodium Bicarbonate C. P. gr. 10, Carminative aromatic menstruum (15 per cent. alcohol) to make one ounce.

Action—The formula of Chologestin would indicate that it is cholagogue, antiseptic, digestive, and under certain conditions mildly laxative.

Uses—Chologestin is recommended in intestinal fermentation and putrefaction, intestinal autotoxemia, indicanuria, constipation due to biliary stasis, hepatic insufficiency and allied conditions, catarrhal cholecystitis, gastro-duodenitis with icterus, fatty diarrhoea, bile tract infection, hepatic colic (interval treatment) prevention of gall stone formation, hepatic stimulant in gouty and rheumatic conditions.

Dosage and Administration—One tablespoonful well diluted in water, or other desirable non-acid solution, after each meal, t. i. d. Children in proportion.

Special Considerations—Palatability, care in selection of ingredients and freedom from sugar.

References—"News and Non-Official Remedies," 3rd edition, page 32.

Manufacturers—F. H. Strong Company, 58 Warren St., New York, N. Y.

REGULIN.

Description—A dry shredded product in loose or tablet form.

Formula—Pure agar-agar to which a small amount (20%) of an aqueous extract of Cascara Sagrada has been added.

Action—It is claimed for this product that when taken into the body it contains agar-agar, absorbs moisture, and passing into the intestine unaffected by the digestive process, softens and disintegrates hardened fecal masses, and in connection with the gentle peristaltic movement stimulated by the slight quantity of contained cascara, materially aids in their evacuation. Regulín is non-irritating and is said to occasion no distress or nausea.

Uses—Regulín is recommended as a logical means of correcting chronic constipation, due to over digestion and hardening and drying of intestinal contents.

Dosage and Administration—Loose or shredded Regulín would appear to be the preferable form. A teaspoonful morning and night in obstinate constipation; one or two tablespoonfuls during day in chronic constipation, gradually reduced. Is best taken as an admixture to cereals, apple sauce, mashed potatoes, or, being virtually tasteless, dry on tongue, followed by a sip of water.

References—Prof. Dr. med. Ad. Schmidt-Halle a. S., Vortrag auf der Versammlung deutscher Naturforscher und Aerzte, Meran 1905, und Münchener Medizinische Wochen-

schrift 1905, Nr. 41. Prof. Dr. H. Leo-Bonn, Münchener Medizinische Wochenschrift 1906, Nr. 27. Dr. W. Voit-Nürnberg, Münchener Medizinische Wochenschrift 1906, Nr. 30. Dr. Mollweide-Freiberg, Therapeutische Monatshefte 1906, Nr. 3. Dr. Josef Piket-Wien, Medizinische Blätter 1906, Nr. 46. Oberarzt Dr. G. Schellenberg-Bealitz, Deutsche Medizinische Wochenschrift 1906, Nr. 48. Dr. J. W. Frieser-Wien, Prager Med. Wochenschrift 1907, Nr. 9. Dr. Hermann Meyer-Dresden, Therapie der Gegenwart 1907, Nr. 5. Chefarzt Dr. Viktor Klimek-Bad Darkau, Allg. Wiener med. Zeitung 1907, Nr. 28. Dr. O. v. Boltensstern-Berlin, Deutsche Aerzte-Zeitung 1907, Nr. 21.

American Agents—The Reinschild Chem. Co., 71 Barclay St., New York, N. Y.

THIOL.

Description—A white and odorless crystalline powder with a sweetish, slightly bitter taste. Neutral or mildly alkaline in reaction. Supplied in three forms: Powder; 5-gr. tablets; and Syr. Thiocol Roche, 6-oz. bottles.

Formula—Thiocol is the potassium salt of ortho-guaiacol sulphonic acid, i. e. potassium guaiacol-sulphonate. $C_6H_3(OH).OCH_3.SO_3K$.

Action—Like other guaiacol derivatives Thiocol is antiseptic, anti-fermentative and tonic. It is readily absorbed and does not give rise to gastric irritation. It is claimed to stimulate the appetite and promote nutrition.

Uses—It is recommended as serviceable in all forms of tuberculosis, acute or chronic bronchitis, pneumonia, pertussis, intestinal fermentation, malnutrition, etc.

Dosage—5 to 20 grains (0.3 to 1.3 Gm.) 3 times a day after meals. Syrup, 1 to 2 teaspoonfuls t. i. d.

Special Considerations—Claimed to be free from irritating properties.

References—Dr. C. Schwarz, Neustadt (Klin. Therap. Woch. No. 19, 1898). Prof. Louis Maramaldi (Gazz. Internaz. di Med. Prat. No. 8, 1899). Dr. John Molr, Edinburgh, (Therapist, Apr. 16, 1900). Dr. J. Braun, (Klin. Therap. Woch., vi, No. 38, p. 1190). Dr. J. L. Hatch, New York, (Med. News, Aug. 1, 1903). Dr. J. H. Jackson, Boston, Mass. (Merck's Archives, Sept., 1901). Dr. J. M. French, Milford, Mass. (Vermont Med. Monthly, IX, No. 6).

American Agents—Hoffmann La Roche Chem. Works, New York.

DIETETICS AND HYGIENE.

Diabetes and the Food Factor.¹—

Stark says that our advanced knowledge of physiological chemistry has revolutionized the dietetic treatment of diabetes. We cannot calculate the wants of the body with mathematical precision and make an algebraic equation out of the stomach and its functions. Feeding in diabetes permits of a good deal of latitude as to choice of foods. The strict noncarbohydrate diet is not called for and often amounts to starvation for the patient. Man cannot live without carbohydrates for long without using up his tissues, and we have virtual starvation. Testing of the urine must be careful and thorough. Diabetic diet should not be a restriction but a selection of foods. Carbohydrates pushed relieve the symptoms of diabetic coma. Fats are generators of heat, energy, and force, and their nutritive value is about twice that of carbohydrates and proteids. They are especially indicated in serious cases of diabetes.

Carbohydrate-Free Foods.²—Following is Von Noorden's list of carbohydrate-free articles of food as given in an interesting article by Tyndale:

Fresh Meats.—All the muscular tissues of mammals and birds, braised, boiled or roasted, with their own gravy, with butter, free mayonnaise or other sauces made without flour, warm or cold.

Inner Parts of Animals.—Tongue, heart, lungs, brain, calf's spleen, kidney, marrow, liver of calf, game and poultry up to 100 gms. (weighed after cooking).

External Parts of Animals.—Feet, ears, snout and tail of all edible animals.

Conserved Meats.—Dried and smoked meats, smoked and salted tongue, pickled meats, ham, bacon, smoked goose breast, American and Australian tinned meats, brawn, oxchops.

Sausage.—All various kinds, if free from bread or flour.

Potted Meats or Meat Pastes.—Strasburg goose-liver, etc., provided they do not con-

tain bread or flour; with home-made articles the absence of flour may be assured.

Albumin, Preparation of.—Somatose sanatogen, casein, eucasein, nutrose, tropon, roborat, etc.

Meat Extracts.—Liebig's, Maggi's, etc.

Fresh Fish.—All fresh and salt water fish, boiled or grilled, or served with flour-free sauce. Fresh melted or browned butter may be taken at the same time. If the fish is cooked in bread crumbs, the latter should be removed before eating.

Conserved Fish.—Dried, salted, or smoked fish, such as cod, shell fish, herring, mackerel, sole, plaice, salmon, sprats, eels, etc.; also pickled herrings, sardines in oil, mackerel in oil, anchovies, sardellen, tunny, caviar.

Mussels and Crustacea.—Oysters, mussels, lobster, crab, turtle, crayfish, etc.

Meat and Fish Sauce.—The well-known English piquant or similar sauces; beefsteak, Harvey's, Worcester, anchovy, lobster, shrimp, Indian soy, China soy, etc., may be taken in small quantities, if not contraindicated for special reasons.

Eggs.—From all birds, raw or cooked in various ways, but without added flour or meal.

Fat.—Of animal or vegetable origin, e. g., butter, lard, fat of roast meats, margarine olive oil, usual salad oil, cocoa butter, goose fat, cod liver oil.

Cream.—Good fat-rich cream, sweet or sour, as drink or added to solid foods or to drinks (if not necessarily restricted) up to about 200 cc. a day. For cooking purposes, cream may be substituted for flour when making special dishes of meat, fish, vegetables and eggs.

Baked Foods.—Very few baked foods are absolutely carbohydrate-free. Those nearly so are prepared partly from ground almonds, partly from gluten.

Fresh Vegetables.—Salads, lettuce, crisp and smooth endives, cress, dandelion, purslane.

Aromatic Herbs.—Parsley, dill, thyme, pimprenell, mint, leek, garlic, celery.

Fruits and Roots and Stalks.—Gherkin, tomato, young green beans, vegetable marrow, onions, rape-cole (so long as they are still green), radishes, sea-kale (in slight cases also root artichoke and stachys), white and green asparagus, hops, Brussels sprouts,

¹Henry S. Stark, M. D., Medical Record, April 11, 1908.

²W. R. Tyndale, M. D., Salt Lake City, Utah, Utah Med. Jour., May, 1908.

zichorie, English celery (except the root), young rhubarb sprouts.

Blossoms and Flowers. — Cauliflower, broccoli, Brussels sprouts, artichoke.

Leaves. — Spinach, sorrel, curly cabbage, white cabbage, red cabbage, butter-cabbage, savoy cabbage, red beet.

Fungi. — Fresh mushrooms, stone or egg fungi, morel truffles in usual quantities.

Fruits. — Bilberries, unripe gooseberries, when prepared with saccharin instead of sugar.

Conserved Vegetables. — Asparagus, haricot, beans, cut beans, salted gherkins, pickled gherkins, peppered gherkins, mixed pickles, sauerkraut, olives, champignons and any prepared vegetables of those groups already mentioned.

Condiments. — Salt, white and black pepper, cayenne, paprika, curry, cinnamon, clove, nutmeg, English mustard, saffron, aniseed, caraway, bay, caper, vinegar, citron—if not otherwise contra-indicated.

Soups. — Meat soups prepared from fresh meats or meat extracts, with the addition of green vegetables, asparagus, eggs, fragments of meat, marrow, liver, Parmesan cheese or other foods contained in this table.

Sweets. — Prepared from eggs, cream, almonds, citron, gelatine, saccharin being substituted for sugar.

Drinks. — All varieties of spring and seltzer water; good brands of brandy, rum, arack, whisky, corn brandy, Kirschwasser and other fruit spirits.

Wine. — All the well-known table wines (white or red) are almost sugar-free; at all events those that have been kept for three or more years in casks; Bordeaux, Burgundy and Ahz wines come under this category. White Rhine, Moselle, Saar wines are also almost free from carbohydrates.

Tea and Coffee. — With cream, but with saccharin substituted for sugar.

Cocoa. — Cocoa may be taken, if not specially contra-indicated. The quantity, however, should be restricted. Ten gms. of the pure cocoa of Van Houten or Stollwerk or 15 gms. of Rademann's cocoa for diabetics (sweetened with saccharin).

Lemonade. — Seltzer water with lemon juice, sweetened with saccharin or glycerin (levulose may be used if specially permitted).

GENERAL TOPICS.

Two Kinds of Wealth.¹— A few days ago a famous American surgeon told a friend that it was a constant mortification to him that for his life-work he had not chosen business rather than medicine; and yet the annual income of this particular surgeon from practice is perhaps \$100,000. Also a few days ago at the testimonial dinner to Robert Koch in New York City, a layman, Andrew Carnegie, who has gathered, who has given away, and who still has left more money than any other one individual, said that he would give all his worldly wealth for the immaterial wealth of many of the physicians there before him. It is distressingly evident that there is a vast difference between the standards of life of these two men. Their judgments seem irreconcilable. The famous surgeon's success and income for one year would more than satisfy many of us impecunious strugglers for a lifetime, and that of Carnegie would give the profession an almost immediate victory over most diseases—a hoped-for victory that is the ideal, the heart of the faith of every worthy physician. Is there no possible reconciliation of the two points of view? What is the truth, and what the falsity of each position, which make them so ludicrously and yet so sadly antagonistic? Why does the surgeon with the income of a prince, but not of a Carnegie, hunger for the millions, while the industrial Cræsus would gladly give all his many millions for the medical man's mind and vocation? If they make the trade, they must soon needs logically trade back again.

The answer to the riddle is really not hard to find. On the surgeon's part, it comes to view at once. He practices medicine for any and every reason but the right one. He values money at more than its worth. Already he has a larger income than he may wisely or beneficently spend; what a mess of it he would consequently make if he had the millions! As all old legends have it, in gambling with the devil, the stakes are Success against Soul. To the sensible, money is of use only in helping to get the few good things which money alone can

¹Journal of the A. M. A., April 25, 1908.

not buy! The envying surgeon and his like suppose that checks can buy what is unpurchasable. The farce of this sorry company is to buy goods which can not be delivered. They are steering straight for eventual psychic and moral bankruptcy.

Robert Louis Stevenson, seeing the life of the medical man only from without, wrote these memorable words: "The physician is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race." Such a tribute to the honor, valor and value of our profession gives those of its members who are faithful a livelier encouraging. In the larger sense it is true, and it is deserved. But every one of us, whether we resist, half yield, or are borne down by the pressing evil, must feel better and stronger by reason of Carnegie's magnificently frank outburst. His money, he confessed, was a poor substitute for the beneficent science of an intelligent and unselfish medical man. The young Carnegie's heart had always been in the work of the physician and humanitarian, but at the time of life when most men embark on their careers of scientific study, the distressing poverty of his family made an immediate start in a commercial career imperative; as he so pathetically put it—"all other thoughts were overwhelmed by the stern resolve to drive the wolf from his parents' door or die in the attempt."

When we think of the intolerable vogue of charlatanry, of the greed of patients, of the dragging weariness of our overwork, of our often pitiless poverty, of our unprovided for families, of the oncoming hopeless old age, we too may at times envy the rewards of those who chose not medicine but the success and fame of the commercial life and with efforts almost superhuman, right or wrong, forge to a first place in the world of finance.

With the most evident sincerity, the most successful and the most unselfish of all millionaires, standing before physicians, says that ours is the preferable lot, the real success, the saner life. What a splendid acknowledgment of the utter failure of the

gospel of getting! What a commentary on the old text concerning the gaining of the whole world and the losing of one's own soul! What an illustration of the obvious fact that at least this one speaker has not lost his own soul! Above all, what a benediction on the life and faith of the genuine physician!

Short-lived Doctors.—A medical contemporary, says *The Practitioner*, recently drew attention to the fact that doctors are a short-lived class of the community. Laymen were naturally surprised. Their view presumably is that the days of doctors should be longer in the land than those of other people because they know better than their patients what to "take" when they feel indisposed or are in the way of infection. Longevity, however, depends far more upon the manner of a man's life than upon the drugs which he swallows; and it is the doctor's misfortune that the exigencies of his calling often make it impossible for him to practice the hygienic doctrines which he preaches. *Obsta principiis* is one sound maxim on which it is specially hard for him to act. He cannot afford to lay up and nurse himself for trivial ailments, but must often be out attending to his patients in spite of a general feeling of malaise. His night's rest may often be broken though he knows that seven hours sleep is the ideal. He may have to take his meals irregularly, though he is well aware of the virtue of regular habits, or to rush out to an urgent case in the middle of his dinner, though he is always warning his patients that that way lies indigestion. Moreover—if he is a general practitioner—those long holidays which he is fond of proclaiming to be essential are very seldom for him. All these disadvantages count for more in the long run than his acquaintance with the quickest means of relieving a headache or soothing a catarrh; and the sum of the whole matter seems to be that the doctor, who made his own health his chief concern, would have to retire from practice in order to attend to it.

The "Opsonic Method."¹—The practitioner who is not a trained pathologist, will probably ask, What, exactly, is the prac-

¹The Practitioner, London, May, 1908, p. 752.

tical value of the *opsonic method* as it stands to-day? He will probably obtain different replies from different sources. The enthusiast may lead him to believe that the method forms a panacea for all the infectious diseases, whilst another may deny that it is of the slightest value. The truth, no doubt, lies between these two extremes. In the case of tuberculous infection, the method, on the whole, has been somewhat disappointing, though many striking cures have been obtained, and we hope that the future will lead us to a better recognition of the class of cases likely to be benefited by this particular method of treatment. At present we are justified in concluding that the method cannot do harm and certainly may do good. It should undoubtedly be tried in those cases in which its use does not interfere in any way with the employment of other methods; but in those cases where surgical means are indicated, and are likely to be efficacious, there should be no delay in order to employ vaccine-therapy. Where, however, no other methods are applicable, as, for instance, in cases of tubercular disease of the iris, or where for any reason the surgeon wishes to wait a while before operating, the method is certainly indicated. In the case of the other infectious diseases, the results have been, on the whole decidedly more encouraging. This is particularly the case with staphylococcal infections of all kinds; here the vaccine method should be regarded as the chief of all therapeutic measures.

The method is a new and complex one, and, until its use has been more thoroughly explored, it should only be carried out under the guidance of an expert. In the enthusiasm begotten of the introduction of a new process, there is always the possibility of too much being attempted, and, if practitioners in general act on the notion that they have only to obtain so many millions of bottled bacteria and to inject them into their patients, the process is doomed, and we shall have another fiasco similar to that which followed the first introduction of tuberculin. When Lord Lister introduced the antiseptic technique he dressed many of his hospital patients daily for months with his own hands; he was demonstrating the value of the method, and a failure due to

carelessness or inexperience of anyone else would have tended to discredit it. Whether an opsonic control of the injections will always be necessary still remains to be shown, but for a long time yet the exhibition of the vaccines should be preceded by a most careful bacteriological examination, and, if possible, the particular vaccine should be prepared for each individual patient. If these precautions are taken, there is little doubt that the opsonic method, and vaccine-therapy, has a brilliant future before it; at present, however, it is certainly in the experimental stage, and should be so regarded.

NEWS ITEMS.

Teachers of Pediatrics.—The Association of American Teachers of Diseases of Children will hold its annual meeting in Chicago, June 1 next, at the Great Northern Hotel. Only teachers of this branch in medical colleges, or members of hospital or dispensary staffs engaged in this class of work, are eligible for membership. Dr. Samuel W. Kelley of Cleveland is the president of the association, while Dr. Robert A. Black of Chicago is secretary pro tem., resting program has been prepared.

Army Medical Corps Examinations.—Preliminary examinations for appointment of assistant surgeons in the army, to fill twenty-three existing vacancies, will be held May 4th and August 3, 1908, at points throughout the country to be hereafter designated. Full information can be had on application to the Surgeon General U. S. Army, Washington, D. C. The essential prerequisites are that the applicant shall be a citizen of the United States, of good character, between 22 and 30 years old, holding the degree of doctor of medicine from a medical school legally authorized to confer it, and possessed of at least one year's hospital training or its equivalent in practice. Complete applications for the examinations of May 4th must be in the hands of the Surgeon General by April 1st, and early attention is, therefore, enjoined on intending applicants.

Consolidation of Medical Publications.—The *Charlotte Medical Journal* and the *Carolina Medical Journal* have been consolidated. A stock company has been created which will conduct one journal in the future, on a large scale. The journal of the new corporation will be known as the *Charlotte Medical Journal*, and will retain the same able business and editorial management of the present *Charlotte Medical Journal*, including the talented and esteemed Dr. E. C. Register.

American Medicine

FRANK CLARK LEWIS, M. D., *Managing Editor.*

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The optometry bill which has slipped through the New York Legislature and been signed by the Governor is a serious mistake. It is so indefinite in its provisions that it opens the door to the legalization of the worst forms of quackery. The "spectacle business" has been an evil for a long time and yet there is a general recognition of the impossibility of ending it soon. Even the most stupid man concedes the wisdom of prohibiting the sale of poisons except under restriction, for he knows the danger of having them available for criminal purposes, but he is not yet sufficiently educated to realize the suffering, industrial inefficiency, bad health, blindness, and even death resulting from improper glasses. He does not yet know that to prescribe glasses correctly a man must know a lot more than "theoretical and practical optics"—whatever that means—for he must understand the diseases which affect the eyesight. The bill therefore legalizes an abuse inimical to public health, an abuse which should be ended. The very opposite legislation is needed, to prevent these uneducated men attempting this work.

The ophthalmologists are partly responsible for this injury to public health, for they have not sufficiently emphasized the need of expert physicians for refraction work, and many have actually denied the seriousness of the matter. Moreover they

have attacked those who have done the most to direct public attention to the far reaching effects of improper glasses. The whole profession is now suffering for the misdeeds of a part—and that part must be thoroughly spanked, though the spanking must be done in the family. If they had done their duty they could have worked up a public sentiment which would have prevented the passage of the bill.

A special license for physicians engaged in refraction is as urgent as a license for X-ray workers. If the optometry law is to stand, we may expect to see another law legalizing as "X-ray practitioners" anyone knowing something of Crooke's tubes but wholly ignorant of medicine and who will be nothing more than a legalized murderer—and that expression is none too strong if we can believe the unpublished rumors of the disasters following the improper use of X-rays, particularly in cancers. Then we will have a law legalizing as aural practitioners all who have "theoretical and practical knowledge of sound waves," with examining boards of musicians to certify that other musicians are fit to treat defects of hearing. Perhaps even we may expect a demand that men possessing a knowledge of metallurgy be licensed to treat defective teeth, for it is no more absurd than to suppose a knowledge of optics qualifies to treat defects of vision.

The danger of attacking new ideas could not receive a better illustration. The whole situation brought about by the internal dissensions among the ophthalmologists is exactly what could have been expected and it is to be hoped that they will now acknowledge what an important matter spectacle prescribing really is, and then do their utmost to have the law repealed and not leave the protection of public health to the general profession. It is their duty to teach laymen that men knowing "theoretical and practical optics" must be confined to their trade of optics and not invade that of medicine.

There is no antagonism between ophthalmologists and opticians.— Such a claim is as foolish as the old cry that druggists and physicians are antagonistic. Commercialism must not be permitted to enter the discussion—it is one simply of skill in medical matters. The spectacle vendor wants to sell his spectacles and the optician wants to make the proper spectacles ordered by a doctor. The practicing druggist might want to sell his stock of drugs, but the real druggist wants to sell what the doctor prescribes.

Medical education for optometrists is as necessary as that which is given to dentists. It need not be as extensive as that for the practice of medicine or surgery. There is a growing impression that even druggists to prescribe over the counter should have a fairly efficient course and be recognized as in England. We have been inclined to believe that such a third profession is needed in the cities to combat the dreadful dispensary and quack medicine evils, by making medical aid cheaper to the poor in the minor ailments.

Many a country doctor is already a dispenser of drugs. Perhaps all these secondary specialized professions will become necessary, and we will have dentists, optometrists, dispensing physicians and what not, all of them selling materials as well as advice, the true professions being confined to advice or operative work, both of which are expensive. In the meantime our present duty is to work for the repeal of any law which permits unqualified persons to sell advice.

The A. M. A. meeting at Chicago was a notable one. But even though it had the distinction of being the largest in the history of the Association, it was still somewhat disappointing in point of attendance. There should have been nine thousand men registered. The location of Chicago geographically, its undisputed place as a professional center and the special opportunities offered, led to expectations that were unfulfilled in regard to the number of physicians who would attend. This in no wise can be construed as a reflection on those who arranged and prepared for the meeting. In every respect the arrangements and the meeting itself were admirable. It would be difficult to point out a single detail that would have added in any way to the enjoyment of the business, scientific and social sessions. It was the members and physicians in Illinois, Indiana, Michigan, Iowa, Ohio and other adjacent states who were remiss. They failed to do their duty when they stayed away. Some of course had no alternative and were obliged to miss the meeting. But nine times out of ten General Apathy commands the stay-at-homes. There is only one conclusion, therefore, that remains,—a great

many physicians were indifferent or lazy, and in either event this was unfair to all concerned, but especially to the men who had labored faithfully and well for the success of the meeting and the benefit of the whole. But still, nearly 6,500 men was splendid,—an inspiration and a promise for the future.

Preventive medicine and optimistic humanitarianism were the watch words of this 1908 meeting and the American people are going to reap untold benefit during the next few years. Without in any way discounting any of the great physicians who have previously presided over the Association, the election of Colonel Gorgas to the presidency this year, is the happiest event in the history of the National organization. No medical man living to-day better typifies the broader aims and possibilities of modern medicine, and it is well that the Association thus honors one who in his character, work and accomplishments so well "points the way."

The future of the Association is rich with promise. A spirit of greater tolerance, more liberality and truer fraternity is apparently growing. Suspicion, hasty criticism and intolerance are passing away in the dawn of the grandest era of humanitarianism the world has even seen. Education of the people in hygienic and sanitary matters is the broader mission of the organized profession as represented by the American Medical Association and the good that has resulted and will continue to result is unlimited. May personal antipathies and differences of opinion in no way offer impediment to a movement so far reaching and important in the life history of our nation.

The limit of eroticism is apparently reached in the otherwise mediocre book, "Three Weeks." As was to be expected it has had an enormous sale. Even the best and most moral people are rarely ever able to resist the overpowering fascination of books on the "risque" order, and if it is any satisfaction the author of this torrid creation may rest assured that she has provided or stimulated many a thought that was far from pure or holy. There would really be no excuse for mentioning this excursion into the realm of bestiality, but for the fact that not a few intelligent people are beginning to see the malign effects of this particular book. It is well known that the evils of such so-called literary productions are principally manifested among the young and innocent, and a prominent Brooklyn clergyman has been recorded as saying that "Three Weeks" is materially adding to the burdens of our founding asylums. If this is true, and a perusal of the book makes it seem not only possible but probable, what a commentary on the literary worth of the work! What an arraignment for the author! And how grateful we can feel to an all-wise Providence that *our* mothers and *our* wives are engaged in better and much cleaner pursuits than writing such romantic rot!

The milk problem is justly recognized as one of the most important with which sanitarians have to cope. Impure milk is the one great factor in infant mortality, and this being so, the question of clean milk deserves all the attention it has been given in recent years. It is a monstrous condition that the lives of little children should be thus jeopardized at all when the dangers from milk can be so definitely re-

moved by the exercise of due cleanliness in milking, bottling and transportation. Pasteurization, while it doubtless has saved countless lives, is at most a makeshift procedure. In lieu of clean methods in the dairy, it is serviceable. But pasteurized milk can never be a satisfactory substitute for *clean* milk. It may be safe as regards bacterial content but it has lost much in palatability—if not food value. It is therefore only as an extemporaneous expedient for minimizing the dangers of milk known to be impure that pasteurization has any place in the scheme of modern sanitation.

Clean milk with a bacterial content so low that it is absolutely harmless is now possible from the development of dairy sanitation. Now that clean milk is known to be feasible *there is no excuse for unclean milk*. The cry that exaction of the details essential to the production of clean milk will work a hardship on the dairy man or lead to a prohibitive price for such milk is ridiculous. The hardship of the dairy man is one that he must get adjusted to as an evolutionary detail of his business and in line with his duty as a citizen. As for increased cost of clean milk, this is an economic question and will soon adjust itself. As soon as the people get educated to the advantages of clean milk, they will have no other, and competition will regulate the price. The paramount need is to awaken the great mass of the people to the dangers of impure and needlessly contaminated milk. Then they will clamor for clean milk, and the public usually get what they clamor for. Education is the solution of the problem.

A Chance for Philanthropy.—The milk problem offers a splendid chance for some

man philanthropically inclined to establish a model dairy farm in close proximity to New York City, that will be not only one of the most useful charities of the day, but an object lesson that will bear wonderful fruit in saving countless babies' lives throughout the land. True philanthropy is that which offers far more than direct benefits, and the man who in supplying the needy poor with pure, clean milk teaches its advantages to the multitude will save more lives than is possible in any other way.

The cruel myth of premature burial seems to be immortal, though it should be buried itself whether it is alive or dead for nothing seems able to kill it. In spite of the repeated publication of the fact that there are very few instances in which it has been proved that live people have been buried alive, there is a widespread popular opinion that this ghastly mistake is quite common. Lay literature is crowded with alleged instances, few if any of which will stand the slightest scrutiny. "Unmistakable evidence" time after time has been shown to be the result of the most ordinary causes. In spite of all this, a certain Mr. Basil Tozer has gone to great pains to collect these disproved instances, and publish them in "*The Nineteenth Century*." It is positively dishonest, and in addition it causes acute anguish to a host of sensitive people whose dread of being buried alive is fanned into a blaze of a real obsession. They forget that oxygen is necessary for life and believe that a live person smothered in a sealed metallic coffin is able to go to the extremes of physical struggling which these morbid minded writers assert. The thing is simply impossible. It is no doubt

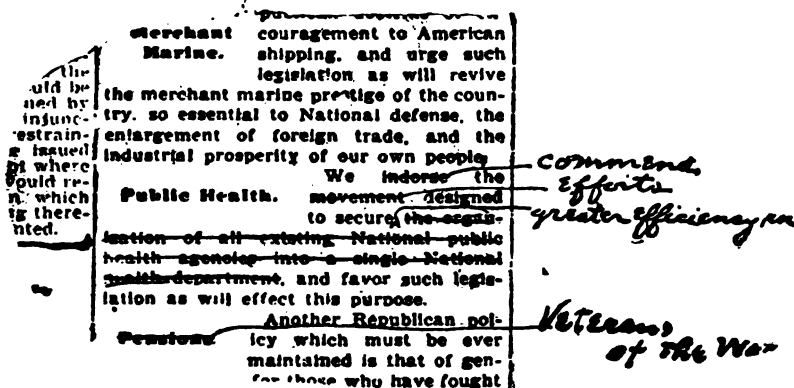
true, that there is no certain test for death in the few minutes or hours after death has occurred, but before embalming or burial or cremation the surer signs of death are almost invariably present. Sensational writers whose morbid minds run to such ghastly impossibilities should be rebuked and suppressed.

The Public Health plank of the Republican Platform after its treatment by the politicians is about as weak and valueless as such a plank could possibly be. As it appeared in its "tentative" form it

got to come. If the dominant party will not thus conserve the most vital interests of the public it is up to the medical profession to support the one that will.

It is unfair to the medical men of the country to ask them to continue to give their best in thought and service, and offer no cooperation by coherent legislative support. Under present conditions, while the results have been remarkable, much individual effort is wasted by a lack of governmental resource and backing.

Properly organized and supported, a National Health Bureau or Commission could



This clipping from the *New York Times* shows in a graphic way how the public health plank was emasculated.

amounted to something and gave promise of recognizing at last the remarkable work that is being done by the medical profession all over this country in promoting the public health. As emasculated and adopted it is an insult to the members of a profession that has done more than any other for the health and happiness of the American people. It is a National disgrace that the United States Government has so long neglected to establish some National Department or Bureau to assume general charge of health matters throughout the country. It is urgently needed and it has

utilize every detail of modern research and discovery, and the effect on the public health would be little short of marvelous. Under present conditions the efforts of public health agencies must ever be greatly limited in scope.

It ought to be apparent to those who have been strenuously urging a National Department of Health that they have made a tactical error. The Republican machine is opposed to any new departments or any additions to the President's official family. President Roosevelt himself has gone on

record as opposing a Department of Health. In the face of these obstacles it is idle to even hope for such a result for years to come and it would have been much more sensible and given much greater promise of success to have worked for a National Health Commission. This might well be composed of three members, a chemist, a sanitarian and a physician. This Commission could divide its work into three divisions; for instance, a Division of Sanitation and Quarantine, a Division of Pure Food and Drugs, and a Division of Laboratory Research. Each member of the Commission could head a division, with proper assistants and a suitable organization for the work he would naturally be called upon to do. Each division could and would cooperate with the others, and a National scheme of public health defense could be developed that would mean everything to the American people.

A commission created along these lines, could, better than in any other way, take advantage of existing conditions and more successfully utilize present efforts and officials. And more than all, its active advocacy would be much more apt to lead to its adoption by those who very evidently control the situation. That this phase of the question is the all important one is shown by the result at Chicago.

The injuring of babies' eyes by direct sun glare is an old practice of ignorant nurses or perhaps of equally ignorant mothers carried away with the alleged benefits of a sun bath. The poor little suffer-

ers are strapped in their carriages and kept for hours on their backs with the sun pouring down in their faces. It was supposed that the habit was dying out, but recent reports show that it is still very much in vogue. Physicians have frequently had occasion to call attention to this brutal practice and it is evident that more instruction is needed.

Perhaps quite a lot of the troubles of early childhood might be traced to these painful sun baths, and it is certain that the eye suffers more or less permanent injury.

The spread of tuberculosis by flies has become an accepted fact in spite of the absence of direct proof. Dr. F. T. Lord,¹ of Boston, had fed tuberculous sputum to flies, and finds that the bacilli multiply in the intestinal tract and are recovered in large numbers from the excrement, which is very virulent when inoculated in guinea-pigs. Should it be proved that human infection is generally by way of the alimentary tract, it is quite evident that flies are partly responsible. The inoculated food, if not eaten for some time, becomes covered with bacilli. The moist living germs are much more dangerous than dried ones which are killed soon by the very act of drying out. The employees of tuberculosis sanatoriums contract the disease so rarely, that we can presume that bacilli coughed into the air by the patients are more or less harmless. There is one more argument, therefore, against the spitting habit which is so disgusting and dangerous to health.

¹ Mass. Gen'l Hosp. Clinical Contributions.

ORIGINAL ARTICLES.

THE CLINICAL TYPES OF ECLAMPSIA (TOXEMIA) AS VIEWED BY THE SPECIALIST FOR THE BENEFIT OF THE GENERAL PRACTITIONER.¹

BY

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It has seemed to me that the tendency, in this day of laboratory specialism, is to eliminate the careful clinician of the olden time. His diagnosis, nowadays, certainly in hospital practice, is made for him in the laboratory, often, too often, before he sees his patient, and the result is that his mission becomes frequently only a perfunctory one. The labor, the time, the intellect, the keen utilization of the judicial faculty, which characterized the men here and in Europe who trained me, appear on the verge of being a lost Art when I read certain text-books and papers written by hospital visiting physicians. They forget that such a thing as a general practitioner still exists and must continue to exist, and thus they magnify methods of research which certainly have a sphere, and a most valuable sphere, but which are also, and must remain, entirely foreign to the resources of the vast majority of practitioners. Hence the reason why I proceed to speak to this topic from the bedside instead of from the laboratory side. As a specialist pleading for the general practitioner I appear before you. I have selected the bedside point of view for the following reasons:

The major part of obstetric work falls to the lot of the general practitioner. He does

not possess a laboratory and if he did he could not afford the time demanded by modern methods for the determination of the type of toxemia present in the individual case. The fee he receives on an average for the care of the woman is rarely adequate for the delivery, let alone the after visits and routine urinary examinations. His patients are too poor to pay for analyses made by competent laboratory experts. The hospital physician and the medical adviser of the rich are in a different position. They have laboratory facilities in the hospital or their clientele can afford to pay for the requisite analyses. Those of you who have consulted recent writings on the toxemias will agree with me that the laudable attempts at differentiating varieties of toxemia practically rule out the family physician as medical adviser owing to his lack of the facilities for the often complicated analyses demanded. One writer, for instance, attempts to differentiate over six varieties of toxemia complicating pregnancy. There surely must be a middle ground where the average family physician may find the information which will enable him to conscientiously give his patients the care which modern views demand; I still believe that this information may be secured at the bedside with the assistance of that routine examination of the urine which every faithful medical man should make.

We may state that for clinical purposes there are three sources of toxemia of pregnancy. These are the kidneys, the liver and the intestines. It is my belief that we are always dealing with a mixed toxemia, that is to say interference with the function of the kidney of necessity entails interference with the function of the other great excretory organs—the liver and the intestines.

¹Read by invitation before the Manhattan Medical Society, April, 1908.

It is also my opinion that the liver cannot become inefficient without concomitant inefficiency on the part of the kidneys and the intestinal canal. Therefore, whilst I would not minimize the value of careful test of the urine, not alone for albumin and casts, but also for acetone and ammonia and nitrogen determinations, to say nothing of leucin and tyrosin, the family doctor cannot do all this and I hope to show that he can reach a sufficiently exact diagnosis of the predominating type of toxemia without such elaborate determinations.

At the outset, he should be on the watch for what I would term the *danger signals* of pregnancy. Thus, whilst pregnancy is a physiological act, there are certain unphysiological symptoms which obtain during its course, which, if they do not exceed the normal, need not cause anxiety. It is normal, for instance, to have a certain amount of gastric irritability during pregnancy. This becomes abnormal where the irritability is excessive. As pregnancy advances it is normal to witness a certain amount of intestinal fermentation the result of impeded intestinal action and function. It is abnormal when this symptom exceeds rational bounds notwithstanding the institution of recognized dietetic and hygienic methods. Occasional headache or visual disturbance may be deemed normal in pregnancy, but these symptoms should not persist. In the later months of pregnancy, edema of the extremities may be expected in women of heavy build, but much and increasing edema should awaken suspicion. Intercurrent attacks of jaundice, whilst not *necessarily* a cause of concern, should place the observer on his guard. Constant tension pulse should carry similar watchfulness.

These "danger signals," one and all, point to the fact that the system may not be getting rid of the waste products and that one or another of the excretory organs is at fault. They call at once for such examination of the urine as lies within the capacity of the average general practitioner. Thus, the total amount of urine passed in the twenty-four hours may be measured and the sufficiency of the kidneys determined. The finding of albumin or casts in the urine comes within the scope of every man and does not entail the loss of much time or carry special expense. The kidneys may hence be found to be a source of the toxemia. Similarly, without testing for indican, the clinical symptoms should suffice to point to the intestines. Protracted vomiting, and emaciation, and jaundice direct attention to the liver. Whatever the source or the sources of the toxemia, fortunately the therapeutics is the same, that is to say it is directed towards securing *derivation* and *elimination*.

In my experience the most frequent type of toxemia is that which emanates from the kidneys. This is the type which is usually associated with eclampsia. In the olden days it was termed albuminuria. Then the physician tested for albumin and casts. Later, to this necessary examination, was added the measuring of the total amount of urine passed in the twenty-four hours thus adding kidney sufficiency to the presence or the absence of albumin and casts. To-day, the medical attendant who pays more attention to kidney sufficiency and to urea estimation is to my mind the man who places himself in the best position for determining kidney toxemia at the bedside. Where the kidneys are sufficient, and where the urea percentage is near the normal, taking into

account the character and the amount of food ingested, albumin and casts of the hyalin variety need not cause much anxiety. I have found clinically that it is not the women who carry the latter in the urine who develop eclampsia as frequently as it is those whose kidneys are insufficient in amount of urine passed and in urea percentage. Thus then the family doctor may reach a diagnosis of impending toxemia from the side of the kidneys without elaborate analyses for ammonia, nitrogen and other waste products. As regards the fulminant type of toxemia unassociated with the above kidney changes, the more elaborate tests are doubtless requisite, but women of this type pass so quickly into coma and thence to death that the time for such tests, even though the suspicion offers that they should be made, does not exist. Like the lightning from the clear sky these women have one or more convulsions, become comatose and die—no matter what the therapeusis. Fortunately such cases are rarities. Again, as regards the kidneys, where pregnancy is superadded to an existing nephritis, or where during the course of pregnancy, acute nephritis supervenes, the characteristic findings in the urine—casts of varied type, blood, and the clinical signs, suffice for diagnosis at the bedside.

Toxemia of intestinal origin, if it offer alone, should be diagnosticated without laboratory test. The rational signs of intestinal fermentation, the torpor of the tract, the thickly coated tongue and the foul breath are sufficient evidence of indicanuria. The self-suggestive therapeusis clears the scene of this type of toxemia.

Toxemia of hepatic type is of recent discovery and may also be surmised at the bed-

side without elaborate laboratory test for biliary waste products. As a rule, we are simply dealing with degeneration of the liver cells giving us the autopsical findings of yellow atrophy. Persistent and uncontrollable vomiting, gradual emaciation, icteric tinge of the conjunctiva, later jaundice—these signs tell us all that the laboratory can. Associated with these rational evidences of impairment of liver function, we find intestinal torpor and kidney insufficiency. This type of toxemia, even as the intestinal type, rarely carries convulsions unless the renal type coexists to a marked degree. This is the lethal type of toxemia, often notwithstanding surgical eliminatory therapeusis. It is the type where, above all, timely surgical treatment is called for, even as it is the type which the consultant sees too late for such therapeusis to be of avail. The chemistry of the urine and examination of the blood carry points of great interest, but, as I stated initially I hoped to show that the busy general practitioner might reach his diagnosis without such laboratory aid.

Just a few words relating to a hypothetical type of toxemia, that emanating from the fetus or degenerated decidual product. There would seem ground for the belief that this type exists, although this is denied by many. The characteristic changes in the urine and in the blood of other forms of toxemia may be absent, as also, in a pronounced degree, the rational signs of all types. Yet the woman is evidently suffering from vague toxic symptoms and on emptying the uterus of fetus, alive or dead, or of mole or of decidual degenerated products, the woman recovers. Thus we are forced to the belief that, after some as yet undetermined manner, the contents of the uterus enter as a factor in causing toxemia of the woman.

Thus, crudely, I have tried to show that the general practitioner need not be helpless in differentiating the types of toxemia, because modern laboratory methods are not at his disposal. Both he and his more favored colleague, the hospital surgeon (with all desirable facilities), are on a par, for the therapeutics, medical, dietetic and surgical, are one and the same—elimination and derivation, both medical and surgical.

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TREATMENT OF THE PUERPERAL ECLAMPTIC ATTACK.

BY

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Assuming the universally conceded premise that eclampsia is a toxemia due to the pregnant state, notwithstanding the diversity of opinion as to the source and identity of the toxic substances, the principle upon which the treatment of eclampsia rests, becomes apparent. With the above indications the treatment of the eclamptic woman calls for the immediate termination of the pregnancy, the counteraction of the various manifestations of the toxic substances and finally the elimination of the toxic substances from the patient's system.

Without temporizing the eclamptic woman is delivered by accouchement forcée under chloroform anesthesia. It is important to deliver under strict asepsis, as the eclamptic woman is especially prone to sepsis on account of her lowered resistance. If the cervix will not admit one finger, the required dilatation is procured by an ordinary dilator. The index finger is then inserted in the os, bent and withdrawn. This manoeuver is repeated several times until

two fingers can be admitted. The same procedure is repeated until the entire hand can be inserted, closed and withdrawn. Both hands can also be employed in stretching the cervix laterally or antero posteriorly, after the requisite extent of dilatation is present. The child is finally extracted by version or forceps. After delivery the patient is allowed to bleed to a greater extent than is usual in a normal birth.

Measures are then instituted to combat the various manifestations of the toxins and for their final elimination by the bowels, kidneys and skin.

If convulsions are threatened chloral hydrate 3ss-3i per rectum may be employed and repeated if required. During a convulsive seizure chloroform and oxygen if at hand should be employed. Steps must be taken to guard the patient from injuring herself or biting her tongue.

With a slow pulse of high tension 4-8 oz. of blood may be withdrawn by venesection, and 1-2 pts. of normal saline thrown into the vein.

The bowels should be emptied with croton oil or calomel. Subsequently the bowels may be kept loose with magnesium sulphate. High colonic irrigations with normal saline 110° F., of half an hour duration may be repeated 3 or 4 or more times during the 24 hours. The Murphy instillations can be carried out in place of the irrigations.

Nitroglycerine may be used for its action on the kidneys and blood vessels.

Diaphoresis should be encouraged by keeping the patient well covered and placing around her hot bricks covered with brown paper soaked in vinegar.

For a flagging heart camphor, caffeine and strychnin should be employed.

A diet of diluted milk until the patient's condition is improved is advisable.

Careful and conscientious nursing is essential to prevent bed sores, chilling of the body and injury. Retention of urine must be guarded against by catheterization. Additional symptoms and lesions are attended to as they occur.

The above is the general outline of the treatment employed in eclampsia;—immediate delivery, free bleeding from the uterus, or venesection, the treatment symptomatically of the various manifestations of the toxins, and finally the dilution and elimination of the toxins by the bowels, kidneys and skin.

In conclusion is detailed the following history of a typical case of eclampsia presenting primarily the hepatic and possibly the nephritic type also.

Mrs. V., 26 years old, a V para, pregnant, at full term, was found in a comatose condition with stertorous breathing. She had vomited. That she had passed through a convulsion could not be elicited. She gradually came out of the coma when she complained of intense headache. She was sallow with yellow conjunctiva and a large amount of albumen in the urine. There was no excessive edema.

Without delay delivery was effected by accouchement forcé. Bleeding from the uterus was encouraged after delivery. Calomel in gr. i doses every fifteen minutes was given, up to ten doses followed by a saline until a thorough watery evacuation was obtained. Chloral hydrate per rectum was given.

Subsequently she received daily magnesium sulphate, three rectal irrigations of normal saline, 110° F. of a half an hour duration and nitroglycerine gr. 1-100 t. i. d.

On the eighth day she developed complete paralysis of the left side. After five weeks' treatment she was discharged practically cured with the exception of a slight paresis of the left side.

SOME REMARKS ON THE ACTION OF REMEDIES USUALLY EMPLOY- ED IN PUERPERAL ECLAMPSIA.

BY

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The rationale of the treatment of any such condition as eclampsia, the causation of which we know so little, must be to a large extent speculative. The indications for treatment are in the main quite plain. (*First*). To eliminate the poison from the blood as quickly as possible. (*Second*). To diminish nervous sensibility and lessen muscular power in order to reduce the convulsions in duration and frequency. (*Third*). To save the infant and mother from injury during the attack.

Inasmuch as in another part of this discussion the treatment has been taken up in detail, it remains for me but to explain the physiological action of some of the remedies and measures that are commonly employed to meet the indications laid down in the beginning of this paper.

Venesection.—Aside from the convulsion the most constant objective symptom present in eclampsia is the full rapid high tension pulse. Venesection in a mechanical way reduces this almost at once. It does more in that it helps the elimination of the poisons, lessening the cerebral hyperemia and thus diminishing the tendency to convulsions. More recent investigations seem to show that it produces an actual as well as a relative leucocytosis, thus aiding the body in its struggle against the disease.

The Eliminants.—Of course the rationale of the action of such agents as purgatives, diuretics and diaphoretics is evident. All of these measures being designed to get rid

of the poisons circulating in the blood, and clinical experience bears out their efficiency.

Saline Infusions, Enemas, etc.—Ten years ago following the lead of the French school of investigators we thought that by saline infusions it would be possible to dilute the poisons and as it were, wash them out of the blood. Clinical experience has not always borne out this theory. They certainly do produce a profuse diuresis and a moderate diaphoresis. Their action is largely a mechanical one. In increasing the elimination much will depend on whether the solution employed is isotonic, hypotonic or hypertonic.

Veratrum Viride.—This is the most commonly employed medicinal agent in this condition. For this reason it is but proper that we should be sure of our preparation. Through some error or other the new U. S. P. considers veratrum viride and veratrum album as equivalents. This is often so, provided the plants are grown in high mountainous regions, otherwise veratrum album is a much more dangerous and depressing drug. Yet there are no restrictions on its use and we are liable just as often to get album as the viride. Pharmaceutically it is difficult to work. Green root tinctures are apt to be grumous and weak. The recently dried root is fully as effective.

The Norwood's tincture is thoroughly reliable, but care should be used in its use as it is much stronger than the U. S. P. tinctures. The average dosage is five minims.

The homeopathic mother tincture is very useful if sufficiently large doses are given. Squibb's tincture is generally reliable. The action of this drug is usually very prompt and unless there be some urgency may be administered by mouth, although for accuracy it is better to give it hypodermatical-

ly. Its good effects have generally been attributed in the main to its depressing influence upon the motor tracts of the spinal cord, but while this influence no doubt contributes in some measure to the beneficial results, its action in this respect is neither so powerful nor certain as a number of other drugs, so its effect must be considered as due to a very large extent to its action on the circulation. The dominant action of this drug is a primary stimulation of the vagus centre, resulting in a slowing of the heart beat and a reduction of arterial pressure. It is generally conceded that it is only of use in eclampsia associated with a high tension rapid pulse. Another interesting fact which may have some bearing on its efficiency, is that in animals there is a marked prolongation in the relaxation of muscles after contraction, which takes place normally, but is more complete than under ordinary circumstances.

Chlorals, Bromides and Anaesthetics.—A discussion of the mode of action of these drugs, the theory of narcosis, etc., would lead us too far afield. Suffice it to say, that all of the agents of this type allay cerebral irritation. In addition the reflexes of the spinal cord are depressed; the motor tract of the spinal cord and the motor nerves lose their conductivity, thus making convulsions an impossibility and so fulfill the second indication for treatment.

Morphine.—The narcotic alkaloids act similarly as far as the brain itself is concerned but do not always inhibit the spinal reflexes so that it is possible to have convulsive seizures, while under their influence. The other well known effects of morphine, such as diminishing secretions and excretions, etc., would seem on the face to make it absolutely contraindicated. Yet it is often

successfully used especially in pale, thin women with low tension pulse. The causes of eclampsia are manifold and in cases wherein the kidney is not seriously affected the temporary narcosis of the nervous system allows nature time to get the organs properly functioning again. The effects of all of these measures are but temporary, but they explain all that we can do scientifically at the present time, and the sum total of this is elimination.

SYPHILIS.

BY

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Portland, Maine.

U. S. P. H. & H. S.

(Concluded).

It is the custom of the writer to have all patients suffering from syphilis assigned to a venereal ward and given a separate table at meal time. All spoons, knives, forks, etc., are scalded and put in carbolic solution and kept separate from things used by others. Also, to try to inculcate personal hygiene. In spite of these precautions I have seen two chancres of the lip as before stated from use of the pipe used by an infected person. Prenuptial sanitary guarantee need not be considered as a man would hardly be willing to obtain a certificate of freedom from venereal disease as a preliminary to obtain the marriage license, and it is not to be supposed that the other party to the contract would consider the matter.

Treatment. Notwithstanding the advance of our knowledge of syphilis in certain other directions, the therapeutics remain practically the same. Mercury is still the sheet anchor and we should be

thankful that in this drug we really have a specific—as much so as quinine is in malaria. Still, owing to its poisonous qualities, it is to be hoped that some remedy may be discovered that will be easier to handle and much quicker in its action. As arsenic is so excellent in other diseases caused by a spirilla, probably our principal hope lies in some preparation of this drug. Mercury is at present the drug of choice in all stages of the disease or rather from and during the secondary, tertiary and quaternary stages. Iodides are of undoubted value. They assist greatly in the elimination and in the bone lesions, they have a place all their own. I have also found pilocarpine of much use on account of its action on the glandular system, increasing elimination. I find this drug especially useful in cases that do not bear mercury well. By its use the ability to take mercury is soon regained, it being given in $\frac{1}{8}$ grain doses twice daily for a week, the specific treatment being suspended during this time. Excision of the chancre is a useless proceeding as the system is infected before the primary lesion appears. I have recently heard of a case in which a physician finding that he had a chancre on his finger, had the member amputated, but without results, so far as systemic infection went. Metchnikoff, I think it was, who finding that a vaccine virus was not obtainable, made use of an ointment consisting of calomel 33, vaseline 10, lanoline 67. This ointment applied to the inoculated part on a macaque ape and well rubbed in prevented the occurrence of secondary symptoms. Dr. Maisonneuve allowed himself to be inoculated with a large dose of syphilitic virus and one hour later the calomel ointment was applied at site of in-

oculation. No symptoms of the disease developed. To be effective the ointment must be applied during the first few hours after the infective contact. "It is very well to inoculate a macaque ape, rub in the ointment and demonstrate that the virus does not develop; you know where to rub. But how is the ordinary confiding mortal, the man in the street to know where to rub? Or is he to inunct the entire genital region and risk producing skin inflammation or mercurial intoxication?" (21).

M. M. Metchnikoff, (22) Roux and Salmon, of the Pasteur Institute, now hope that a more satisfactory method has been discovered in the hypodermic use of atoxyl or anilarsenate of soda. Hallopeau of the Paris faculty, made a report to the Academy of Medicine of Paris, on the generally favorable results of this treatment in upwards of 150 cases of syphilis. A rapid summary of the *modus operandi* and of the principal details of this treatment is given but for this, the reader is referred to the original article in *Boston Medical and Surgical Journal*. Experimenting on the macaque ape with injections of atoxyl, Metchnikoff has found that when given hypodermatically after the appearance of the chancre at the point of syphilitic inoculation, it does not prevent the evolution of the disease, but that when used earlier before the chancre has appeared, during the incubation interval even so long as two weeks after inoculation, no visible signs of syphilis manifest themselves. This is the really interesting point in the whole affair. The writer has been told often by men who frequently exposed themselves, that they never became infected because they always carried a bottle filled with alcohol or strong whiskey and used this to

thoroughly wash with after exposure. Mercury, as has been stated, is the remedy, when once the disease has manifested itself, but the diagnosis should be made positive either by finding the treponema or by the appearance of secondary symptoms, before this drug is used, otherwise it will mask the symptoms and materially interfere with after treatment. Many a man has gone through life with the sword of Damocles suspended over his head, suffering constantly with syphilophobia. I have met these cases often, and have been much troubled to say whether or not they had been infected. Having made the diagnosis, push the remedy as fast and as long as the patient can bear it. Two years' steady treatment will generally effect a cure.

The particular form of the remedy selected and its method of administration is a matter of personal choice. Pills, while convenient are certainly the least recommendable form in which to administer mercury. It is obvious that the mercury may not be equally distributed throughout the pill mass, and on the other hand they are not always dissolved, much less assimilated. Indeed, old or illmade pills may traverse the alimentary canal unaltered. If pills however are freshly prepared and properly made, they can be used. Glycerin is probably the best excipient as it has the double advantage in that it prevents hardening and enables the careful pharmacist to ensure a more perfect distribution of the active substance, these two being the two great *disiderata* in pill making. Pills are however more likely to cause stomatitis, gastric irritability, diarrhoea and colic.

The use of the insoluble mercurial compounds, such as calomel, gray powder and particularly the salicylate, used hypoder-

matically have become very popular in the past few years. The salicylate of mercury is a white powder containing about 50% of mercury. It is usually given suspended in an oily vehicle, as sweet oil or albolene. It is claimed for this drug that it is very effective, that it does not cause gastric irritation, diarrhoea or colic, and is less likely than other preparations of this class to cause abscess formation. The slowness of its conversion into a soluble compound and subsequent absorption permits the use of large doses at one time, so that only one injection a week is necessary. I have had no personal experience with the drug. The principal objection I think is the uncertainty of the amount absorbed at once and the consequent unscientific conclusions that must be drawn.

My own preference is for the biniodide made soluble by the addition of sodium iodide.

R Hydrg. Bin Iodide gm. .20, Sodium Iodide gm. .20, Aq. Dist. 20 c.c. mix.

Ten drops of this represent 1-9 of a grain of mercury. This dose of 10 drops is given intravenously once a day. I also use the same prescription for intramuscular injections, 10 drops twice a day. I find the treatment is more effective and the symptoms disappear in about one-third less time, when the intravenous method is used. The dose is also smaller, being only one-half. Recently I have treated a number of cases by both methods. Two men who were receiving intramuscular injections complained of pains in the bones, muscles, etc. So I changed over to the intravenous method with them and the symptoms disappeared almost immediately. Of course, each of the patients has a separate hypodermic

needle which is boiled after use and kept in alcohol.

I have said nothing of inunctions with mercurial ointment. These are very effective and act much quicker than mercury by the mouth, the action of mercury when given by the mouth being four times as slow as the intravenous use.

All cases should use a gargle, composed of potassium chlorate, powdered alum and tincture myrrh. This can be used freely at all times. Patients should abstain from the use of alcohol and use very little tobacco.

Up to the present time no observations have been made as to whether syphilis can be transmitted from one animal to another by fleas or bedbugs—fleas transmit plague—and syphilis being a blood disease it may possibly be transmitted in this way also.

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THE SPIRIT OF 1908 IN MEDICAL AFFAIRS.*

BY

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A few days ago, a prominent lawyer in discussing a newspaper editorial on a medical topic, suddenly said, "What is the matter with the medical profession? We are constantly being told that the past decade has witnessed wonderful progress in medical science. Discovery upon discovery has been announced. The lay magazines and newspapers have been full of the triumphs of laboratory investigation and research. Apparently more is known today of the causation of disease than ever before. The diagnosis of maladies through the aid of the microscope, the stethoscope, the x-ray and chemical analysis was never more accurate. Success, almost unbelievable a few years ago, in the prevention of diseases like yellow fever, malaria, typhoid fever, the plague and many others, is today taken as a matter of course. But yet, in spite of all this, you medical men are not offering the afflicted individual any where near the relief and cure afforded him twenty years ago. The medical men I talk with impress me as highly skeptical of their own ability. They say that drugs are of little or no value; that there is no such thing as the cure of disease; that sick people get well through natural agencies—if they have luck and a fairly good nurse. They tell me that their colleagues for years have been using remedies of which they know nothing, and most of which are worse than useless. They tell me of wonderful diagnoses—corroborated by post-mortems; they tell me of successful operations—following which the patients died. But they do not tell me about the successful treatment of disease, nor the relief of pain, suffering and distress, and I wonder if physicians are doing as much for the afflicted individual as they ought.

I tell you, doctor, I miss my old family physician. He did things. He cleared out the bowels, he used hot applications, he relieved pain and he never created or

tolerated any doubts about recovery. He listened respectfully to my tale of woe, regulated my diet after a fashion that seemed to do good whether it did or not, and gave me a lecture—or a bitter tonic. But there was never any doubt or hopelessness mixed with his treatment. Nowadays I may know more accurately whether I am an interesting case or a pathological nobody. But after all I am really more interested in what is going to be done for me and what the outcome is to be. It is nice to know what ails me and my number in the catalogue of diseases, but it is not a circumstance to getting rid of my pain and getting back my appetite, strength and health."

These remarks while homely so well typify the opinion apparently held by more than one intelligent layman, that they are worth pondering. Is there any thing the matter with the medical profession? Are we drifting away from first principles and in the multiplicity of new discoveries, new ideas and changing viewpoints, losing any part of our usefulness as medical men? There can be no question but that the medical profession is undergoing a great and epoch making revolution. Idols are being thrown down, old and apparently well established beliefs are being questioned and controverted, and as always happens when a revolution is under full headway, chaos seems to reign. The future holds two prospects. On the one hand is disaster, the sacrifice of years of study and investigation as well as of centuries of faithful unflagging devotion to the needs of humanity. Such a disaster means the decline of medical prestige and an era of charlatanry and quackery such as the world has never seen. On the other hand is a general readjustment of the medical situation, the revision and classification of present day knowledge and a truer recognition of certain fundamental facts on which the

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successful practice of medicine always has depended and always will depend. If this latter takes place, the medical profession will come to its own and with the restoration of confidence and an appreciation on the part of the laity of what scientific medicine really has done and can do, there will be no limits to which our profession can go for the benefit of mankind.

The present chaotic situation does not call for the raucous cry of the alarmist nor warrant the gloomy prognostications of the pessimist. But with all the earnestness at my command I want to insist that it is time to take account of stock, to get our scientific, ethical and commercial bearings and set out for the future with confidence, trust and steadfast purpose.

For the past five years the dominant features of modern medicine have been doubt, pessimism and intolerance. With tactless zeal, the medical profession has done its laundry work in the full gaze of an ever critical and not over friendly public. Quarrels with our tools and with each other have been the order of the day. Criticism, suspicion and accusation have been rife, and on every hand have sprung up commercialistic tendencies that have lowered the dignity and efficiency of our profession. The thirst for money, power and position has possessed us, and under the spell of these dangerous intoxicants too many of us have lost sight of the true nature and obligations of our calling. With a stupidity that is incomprehensible we have rushed to sit at the feet of every new prophet, no matter how questionable his teaching, and have foolishly forsaken the time proven logic of the old. Thus, in many instances established facts have been discarded for phantom theories—though temporarily let us

hope. The worship of the laboratory fetiche has caused us to sadly neglect clinical and bedside observation and the glamour and fascination of surgery has blinded us to the possibilities of hygiene, diet and intelligent medication. In fact the regular medical men of this country have been sowing the wind and only now are beginning to reap the whirlwind. One has only to pause and note the fearful increment of new "pathies," new healing cults, church clinics and so on, and to realize the remarkable decrease of medical prestige and medical incomes, to understand that the price we must pay for our pessimism, internal discord, intolerance and professional commercialization will not be small. This is the gloomy side of the picture.

But while the profession as a whole has gone far afield, thank God there have been plenty of those who have labored wisely and well. They have scorned to worship at every new shrine and with sublime disregard for personal gain have nobly done their part to elevate and perfect the science of medicine. Thanks to these men, some individually known to fame, but more "unheralded and unsung," the triumphs of sanitary science and medical progress are among the grandest of civilization. So that to-day, in spite of widespread skepticism, intolerance and pessimism, the practice of medicine holds greater and more wonderful possibilities for the benefit of humanity than ever before.

I believe that I can see a growing tendency on the part of the average medical man to realize that while he does not and cannot know everything, he certainly knows much, and by the intelligent use of what he can and does know he can accomplish a great deal more than the quack and

charlatan in the relief of the sick and the prevention of disease. This is to me the spirit of 1908 in medical affairs—the spirit of hopeful service, or in other words, making the most of ourselves through appreciating our possibilities and recognizing our limitations. Whole truths are always desirable, but half truths are better than none at all. God Almighty puts us here to work out our destiny. In any calling or in any undertaking we can only do just so much and no more, and the practice of medicine is no exception to the rule. But as in every other vocation, earnest resourceful effort not infrequently accomplishes results seemingly unattainable. Hopelessness is the greatest human handicap, whether in the accomplishment of a purpose or in recovery from disease. The creation or fostering of false hope is dishonest, but what shall we say of the doctor who robs a patient through false zeal of the hope that is his?

In conclusion I seek to emphasize one thought. The strife, discussion and controversies of the day cannot change one iota the fact that every honest medical man wants to accomplish the greatest possible good in the best possible way. Many men have many minds. Opinions of necessity will differ. But the man who believes differently than we do may be as near to the truth as we ourselves, and we certainly have no right to question his honesty. The new spirit of 1908 with its keynote—hopeful service in behalf of humanity, is incompatible with intolerance and narrowness. As physicians, and especially medical journalists we cannot afford to neglect a single effort that will aid in bringing the medical profession a little closer to the goal of truth, accuracy and above all, usefulness.

A MEDICAL NEED.

BY

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There are some things in the great march of improvement that cannot be bettered. Because any thing is old, though well-tried, it does not necessarily follow it is past its usefulness and should be given up. No one would suppose that the knowledge of the alphabet is unnecessary in learning to read, though some advanced theorists would dispense with it altogether and teach the young idea to read by the application of certain sounds to certain combinations of letters, or words. Now the same is true with the alphabet of medical treatment, or the knowledge of the nature and properties of drugs, their actions in the human economy and the capability of certain combinations to meet the different morbid conditions; to this end our forefathers thought that the study for the medical profession should be directed. But in this age of ready-made medicaments this part of medical training does not seem so much emphasized as formerly. There are so many assistants to the overworked physician that any thing, which does not require mental effort to prescribe, is, many times (too many it is to be feared), employed with little benefit to the patient and with as little honor to the physician. The disease given, he searches his ready-made medical arsenal to meet the apparent diseased condition; and the greater the knowledge of such formula, the more successful (?) is he held in popular estimation.

Is the habitual use of ready-made remedies, proprietary or otherwise, sensible or scientific? Suppose they contain the

medicaments indicated for the case in hand, is not their composition fixed and only adapted to typical and average cases? Can one ingredient be lessened or increased in quantity without modifying the remedial effect of the others? Suppose we desire to double one ingredient and retain the same quantities of the others, is it possible as the medicine is now compounded? Take, for example, the compound cathartic pill. Here we have a fixed amount of certain remedies, or drugs, which in those proportions are to meet certain ends. Suppose now the lessening in the amount of one of the components is wished, how are we to effect it without altering the other ingredients, which it is not our desire to do? We are thus forced to discard this remedy and have recourse to a simpler or more satisfactory combination. What is true of the cathartic pill is no less true of many other remedies with fixed formulas which are now put upon the market by the thousand, all with this cast-iron character.

If, then, there are some methods of prescribing which are open to serious objections, how may they be obviated? For this two courses are clearly indicated; either the physician should return to simpler forms of prescriptions of which he has knowledge, or he must acquire by study, experience and by a more intimate acquaintance with drugs the capabilities of combination, besides their mere history and locality in the vegetable kingdom. But this would require a personal knowledge of drugs, their various preparations, properties, compatibilities, etc. besides their medical uses, and again the only way in which to write intelligent prescriptions and at the same time to know whether the druggist has followed the true directions of the practitioner in making up

the prescription. The majority of us for the most part are, in this respect, left in the dark. Much substitution would thus be prevented.

But is it derogatory to the medical profession to acquire such knowledge outside of books and medical lectures as now given? Authority, if a good one, is a good guide, but experience is a better. Under the old apprentice-system, a form of instruction now tabooed and regarded as unscientific and a reversion to barbarism, a personal acquaintance with drugs was considered a branch of the most vital importance in the study of medicine. Why should medicine be placed on a different plane from chemistry, physics, biology, bacteriology and all other kinds of research demanding an intimate knowledge of their basic principles? Can books alone make a good chemist, physicist or biologist? Did Tyndall, Pasteur, Lister and a host of lesser lights in medical and scientific pursuits render their great boons to suffering humanity through mere bookishness?

This slighting of the study of pharmacy in the medical curriculum is not, however, confined to the schools of this country. In the medical schools of England a like condition of things may be noted. John Fernel, a famous French physician who flourished in the sixteenth century, and for his learning was styled the modern Galen, uttered

Note.—According to the last issue of the catalog of the Medical Department of Columbia University, I note that some instruction is given in both theoretical and practical pharmacy—better, of course, than none. But a curriculum comprehending only one or two hours a week, and the whole instruction covering a period of but six months at the most, can hardly be an equivalent to the actual quantity of experience obtained by handling and compounding “live” medicines.

these words to characterize the condition of things then which are as applicable today, "No one could accomplish anything great by the simple knowledge of generalities, without the habit of studying particular cases." In so doing we should revert to the theoretic teachings of the ancients. Mr. John C. Jeaffreson, an English writer, the son of a surgeon of considerable note, has expressed himself very emphatically on this point in his "Recollections," (Vol. I. pp. 23 fol.). He was born in 1830 and apprenticed at the age of fifteen to a surgeon-apothecary for a period of *five years*, a practice which has been abolished. He observes, that the students in the English medical schools feel it a great misfortune that they no longer pursue their medical studies under the old apprentice-system which gave them an intimate acquaintance with drugs and their preparations. To remedy this defect in their early training, many students "would seek employment as dispensers and assistants to general practitioners (that is apothecaries), and to mere druggists in order to acquire the particular knowledge and aptitude that are consequences of the discipline of apprenticeship. He further observes, that the old class of physicians were thus led to distinguish between good and bad drugs by their personal knowledge while the modern physician puts no drugs into the "bodies of their patients but what the druggists tell them." It is in this way, therefore, that the pharmacist or manufacturing chemist in this country virtually prescribes, the physician merely diagnosticating the case. But some of the most eminent physicians and surgeons in England, according to Mr. Jeaffreson, consider the new regime no reform at all.

But, says the young, ambitious medical aspirant, fresh from his academical studies,

"There is no time to study pharmacy; the four years course, now required in the best medical institutions, is fully occupied with a greater number of studies than our grandfathers ever dreamed of; then comes the hospital for at least another year and perhaps a post-graduate course added"; lastly *Practice*, I add, the chief factor in the medical career which all the profession are after. The question is, how to acquire and how to retain it?

There are many "frills and graces" in the medical as well in our secular schools so to speak. But it is the general complaint and, in some degree, of the pupils themselves, that so much is taught there is no chance to learn anything. Allowing for the robust scholarship which our fathers had, they may not have known as much as the present generation, but they knew thoroughly what they did know. Perhaps the greater difficulty of obtaining knowledge then made them appreciate it the more.

There are some branches of medicine which may be well left for the post-graduate course, such as the different specialties. It is impossible to make every one a Latinist, a Greekist, a philologist or a great surgeon; but it is permitted to everyone so inclined to obtain the groundwork of an education which will prepare him for some high career if possessed of the ability. Geniuses are not made to order. All are not fitted to be great physicians or surgeons; but all may learn the principles upon which a successful practice of medicine depends. Then why overburden the medical curriculum with studies which only the wealthy, or those who are intending to adopt a specialty, can satisfactorily pursue?

The sum and substance of the practice of medicine (let me accentuate this) consists

in proper diagnosis and the administration of medicaments—the popular notion and no doubt the true one. How are we to treat a disease satisfactorily, or scientifically, without a knowledge of drugs, especially their compatibilities and incompatibilities, and combinations. There may be no friendly pharmacist within the circle of our practice who will supply us with ready-made medicaments, of elegant form and endless variety. For if we have never been taught to prepare our medicines and we have no time to begin at this late day, the druggist certainly should receive our thanks for teaching us acceptable combinations of useful drugs. Beyond this our obligations do not extend.

How, then, may the overburdened medical student obtain the requisite instruction in pharmacy without trespassing upon the time that should be devoted to the new accessions to the science of medicine? Two ways are open to him. Some of the studies now embraced in the regular course, may be turned over to the post-graduate department, to those who intend to distinguish themselves as specialists of some kind, and a pharmaceutical chair and laboratory added to the regular curriculum. Here the medical school proper would correspond to the German Gymnasia, which are academic institutions; the post-graduate department to the German University, which is a special school of instruction. This course may be advantageously taught, not including vacations, for not over a full year. Or, again, the student, if his time is not filled too full with specialties, might take a brief course in some school of pharmacy where he might learn the rudiments of that branch of medical science to some purpose.

The second course open to him, and the best under existing circumstances, would be

to follow the practice of English medical students, as instanced by Mr. Jeaffreson, and a course which I have myself advised and advocated for some years. This is to enter some druggist's shop during the long vacations and there learn what the schools fail to teach and the druggists themselves accuse the physician of being ignorant of. Rich students might pay for the privilege and the waste of materials, while the poorer ones thus assist themselves in obtaining a medical degree.

The result of either course is obvious. The physician would acquire a better knowledge of medicaments and no longer depend entirely on the pharmacist for his ready-made medical supplies; while the manufacturing chemist would supply the trade with simple drugs, new remedies and special preparations, the local pharmacist filling the individualized prescriptions of the physician. The relations, now so strained between the medical faculty and the pharmacist, would tend to become more amicable. All violations of the law could be then conscientiously carried to the proper tribunal. A return to prescribing more simple drugs would not only meet the counter-prescriber on his own ground but the physician himself would show what he really should be, a medical practitioner.

Application of Tincture of Iodin in the Dark.—In the *British Medical Journal* for November 16, 1907, J. Dunbar-Brunton describes a peculiar property of iodine. If the tincture of iodine is painted on the skin in the dark, or is exposed only to a red light, such as is used in photography, and is covered immediately without being exposed to a white light, it will be absorbed with much greater rapidity than under ordinary circumstances, and it is said not to discolor or blister the skin, even if used for long periods.—*Medical Council*.

ORTHOTIC ALBUMINURIA; ITS RELATION TO TUBERCULOSIS.

BY

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(Biography continued from last issue.)

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Read at Meeting of New Mexico Medical Association, May 9th.

THE GASTRIC SECRETION IN OLD AGE.¹

BY

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Investigations into the normal gastric secretion have been mainly made in young persons, and but few observations have been recorded in this direction in older individuals. It is of great interest to note whether the general changes that take place as individuals grow older are similarly accompanied by changes in the gastric secretion. Both Ewald¹ and W. Fenwick² have pointed out the occurrence of atrophic changes in the stomach as well as the disappearance of free hydrochloric acid in old age. Karjaard³ was the first to systematically investigate this problem. He studied the functions of the stomach in four individuals who were over fifty years of age and who did not complain of any gastric disturbance. He found an absence of free hydrochloric acid in all and concluded that the hypochlorhydria is related to and proportionate to the degree of arteriosclerosis.

In a further investigation upon seventy elderly individuals Seidelin⁴ observed that free hydrochloric acid was constantly absent in 28 (14%). In only six cases (10%) was there a normal percentage of free hydrochloric acid. Of 45 females 15 (33%) presented an entire absence of free hydrochloric acid, while in 25 males 13 (55%) presented this condition. In 48 cases of marked arterio-sclerosis there were 24 with an entire absence of free hydro-

It is never safe to promise that adenoids will not return, even when the most thorough efforts have been made at their removal. A proviso is therefore always in place.—*Int. Jour. of Surgery.*

¹ Read at the Annual Meeting of the Medical and Chirurgical Faculty of Maryland, April 29, 1908.

chloric acid, while in 22 cases without apparent arterio-sclerosis there were but four without free hydrochloric acid. Seidelin concluded that in a large proportion of elderly individuals there is an absence of free hydrochloric acid in the gastric contents, there being a special relation between this condition, and the degree of arterio-sclerosis.

hydrochloric acid is not an uncommon condition in old age.

In our observations 27 cases were examined; of these every individual was over fifty-five years of age, and in no instance did any case present symptoms indicating the presence of any gastric disorder. At least two examinations of the gastric contents were made in each case, and in most

No.	Name.	Sex.	Age.	No. of Tests.	Average	Average %	Degree of
					Total Acidity.	Free HCl.	
1	T.K.	M.	57	4	28	0.08	marked
2	L.F.	M.	64	2	34	absent	none
3	S.P.	M.	69	3	8	absent	marked
4	J.M.	F.	56	2	12	absent	marked
5	N.S.	M.	58	2	27	0.11	none
6	B.P.	M.	75	4	30	trace	marked
7	C.J.	M.	59	5	26	absent	marked
8	M.M.	F.	67	4	12	absent	none
9	C.S.	M.	72	3	54	0.15	none
10	F.H.	M.	62	4	18	0.05	none
11	A.L.	F.	60	2	94	0.22	marked
12	S.D.	M.	68	2	14	absent	marked
13	N.R.	M.	59	4	28	0.009	marked
14	F.H.	M.	68	5	46	0.13	none
15	F.S.	F.	61	4	22	0.08	marked
16	D.B.	M.	58	4	18	absent	marked
17	M.N.	M.	70	3	27	0.08	marked
18	P.S.	M.	65	3	62	0.19	none
19	W.D.	F.	57	2	6	absent	marked
20	H.R.	F.	74	2	96	0.28	none
21	G.R.	M.	57	2	12	absent	marked
22	J.P.	M.	68	4	28	0.05	marked
23	W.B.	M.	71	5	30	absent	marked
24	H.P.	F.	58	3	36	absent	marked
25	T.L.	M.	63	3	104	0.27	marked
26	S.M.	F.	75	3	52	0.14	none
27	L.N.	M.	59	4	20	absent	marked

This table represents the results of examinations for total acidity and free hydrochloric acid.

Liefschütz⁵ examined the gastric contents of 60 individuals who were all over 50 years of age. Of these 25 showed a constant absence of free hydrochloric acid. He also found achylia gastrica present in 37% of his cases and concludes that the gastric secretion has a distinct tendency to diminish after the fiftieth year of age, and that an entire absence of the free

instances three or four, and in three instances five. The persons examined were given an Ewald test breakfast and the gastric contents removed at the end of an hour, and examined for the total acidity as well as for the free hydrochloric acid.

There were eleven cases between the age of 55 and 60 years, five, between 60 and 65, six between 65 and 70 and five

between 70 and 75. Free hydrochloric acid was constantly absent in 12 of the 27 cases (44%). In only five was there a normal percentage of free HCl, (18%); of 19 males eight (42%) presented an entire absence of free HCl, while of eight females four (50%) presented this condition. In eighteen cases of marked arterio-sclerosis there were ten with an entire absence of free HCl, and six with a subnormal amount of free HCl; while in nine cases without arterio-sclerosis there were but two without free HCl. As a further evidence of the fact that the gastric secretion has a tendency to diminish in individuals over 50 years of age Leifschütz⁶ draws attention to the fact that 37 percent of his cases of achylia gastrica occurred in individuals over the fiftieth year of age. According to our own observation this percentage is 40. The following table taken from Osler's Modern Medicine⁷ indicates the number of cases of achylia gastrica at various ages among our 112 cases; 45 of these cases occurred after the fiftieth year of age.

Years.	Males.	Females.
up to 20	1	1
20 to 30	5	8
30 to 40	10	9
40 to 50	18	15
50 to 60	15	20
60 to 70	6	4

From these observations as well as from those of Leifschütz and others it is evident that the gastric secretion has a tendency to diminish in old age, and in a degree proportionate to the arterio-sclerosis, and it is therefore unwise to attach too much importance to the absence of this secretion in individuals advanced in years, in the diagnosis of cancer of the stomach.

¹ Ewald. Berlin Klin. Wochenschrift, 1887, No. 30, and Klink. d. Verdauungshr ii 3 Aufl., p 215.

² W. Fenwick. Virch. Arch., 1890, Bd. 118.

³ Karjaard. Dissertation, Kopenhagen, 1888.

⁴ Seidelin. Berlin Klin. Wochenschrift, 1904, p. 945.

⁵ Leifschütz. Archiv. f. Verdauungskr., 1906, p. 426.

⁶ Leifschütz. Archiv. f. Verdauungskr., Vol. II, p. 420.

⁷ Friedenwald. Osler's Modern Medicine, Vol. 5.

SURGICAL NOTES.

If bleeding persists after meatotomy, the meatus may be plugged up with a small pledget of cotton saturated with adrenalin solution, 1 to 1000. This generally acts very speedily and efficiently.

In preparing the field of operation, care should be taken that in the use of the razor the utmost gentleness be exercised to prevent abrasions, which may become the site of infection. For the same reason cleansing with a stiff brush or vigorous scrubbing should be avoided.

In cases of inguinal adenitis of obscure origin a thorough examination of the lower extremity may reveal the source of infection. Such infective foci are particularly to be sought for in the foot, as, for instance, an ingrowing toe-nail with ulceration or an abraded corn.—*International Jour. of Surgery.*

Uterine Hemorrhage.— In discussing the significance of uterine hemorrhage as a sign of disease, Mr. J. D. Malcolm makes a plea for prompt and thorough investigation of all cases of abnormal hemorrhage, especially in patients in young and middle life. He considers uterine curettage and examination of the scrapings under the microscope of diagnostic importance in cases of slight enlargement of the uterus associated with abnormal hemorrhages. This procedure, however, is contraindicated in the presence of complicating salpingitis.—*Int. Jour. of Surgery.*

CORRESPONDENCE.**THE VITAL PRINCIPLE; ITS CHARACTER.***A Reply to Dr. Austin O'Malley.*

BY

DUNCAN MacDOUGALL, M. D.,
Haverhill, Mass.*To the Editor of American Medicine:*

In reply to Dr. Austin O'Malley whose article entitled "Is the Vital Principle Ponderable" appeared in the November, 1907 number of AMERICAN MEDICINE, in which he criticizes my theory of a soul substance as set forth in AMERICAN MEDICINE for April, 1907, I would make the following defense:

I will take the doctor's objections in the order given by him.

The first objection concerns my experiment and is to the effect that we do not know the exact moment of death, and that my patients were not really dead when I thought they were. Dr. O'Malley's objection is based upon the well known fact that cases of suspended animation and resuscitation after apparent death do sometimes occur.

If it is recalled that the subjects of my experiment with the exception of the case of diabetic coma all died of chronic pulmonary tuberculosis, after the usual protracted period of toxæmia, with the usual destruction of pulmonary tissue, with the progressive emaciation and exhaustion so characteristic of this disease, and finally with the slow but sure collapse, that almost invariably marks the end, it will be seen at once that these cases in no way leave possible a suspicion of suspended animation or a possibility of resuscitation after respiration and cardiac movement have once ceased.

In his second objection Dr. O'Malley asserts, that I have said or supposed that because I could not otherwise explain the loss than as probable soul substance, therefore no other explanation was possible. After reading this objection of the doctor's, in trepidation I reread my original article to see if I had been guilty of such a gross piece of egotism.

I fail to find any warrant for such a charge and would respectfully ask Dr. O'Malley to reread my article and see if he is really justified in making it.

In his third objection the doctor attacks my belief that substance must necessarily be space occupying. My position is that whatever else substance is or is not it must necessarily be space-occupying.

The doctor makes the assertion that substance as such has no necessary connection with space, and then cites a theological dogma concerning God as the absolute substance to prove his assertion. Now the doctor knows very well that the scientific conception of substance has nothing whatever to do with a definition of the Absolute.

We know that there is an absolute, beyond that we cannot go in knowledge, because knowledge is limited to that which is related to cognition, the absolute is not so related, for if it were so related it would cease to be the absolute. We know it is, but beyond that knowledge ends; and so when Dr. O'Malley injects into his argument notions concerning the absolute as a substance yet not in space at all, he is drawing upon theological doctrine, he is trying to pass an act of faith as a legitimate conception, he is going far beyond the conceptional limit of human consciousness.

Can he form any notion in his consciousness of a substance that is not space occupying? He tries to do this; let us see how he succeeds.

He goes on to say, "In the order of nature material things occupy space, but even there if we consider the entire finite world as a unit, it is not in space. Space is the superficies of the containing body considered as immovable and immediately against the located body. Place is the bounding surface with reference to the interval included. Space is this interval with reference to the bounding surface. Since beyond the finite world there is nothing, there is no superficies of a containing body that touches it, and the world as unit is not in space; furthermore for the same reason it is not in any place. So that a substance that is not only not in space, but not anywhere, yet actually not potentially existing is, 'thinkable.' "

The doctor is careful to add, "this is not hair-splitting, but a mere question of the

exact use of English, which should be observed even in scientific articles, especially when they trench upon metaphysical grounds."

Well no, it is not hair-splitting, but it is like taking the whole hair of a head and the whole skin, bones, membranes, and brains of a head and calling the whole thing brains. It is one of the worst instances of the "petitio principii" that I ever read. It practically amounts to this:

Give me Universal Substance, and give me Universal Space, and let me consider the two as a unit or one thing, and let me call that one thing substance, and forget all about the space, and I will furnish you a conception of a substance that is not in space, I will make "thinkable" a substance that is not only not in space, but not anywhere, yet actually not potentially existing.

Dr. O'Malley has drunk deep at the springs of learning, but I have a suspicion that he must have kissed the Blarney-stone as well. It is the old trick of the "petitio principii" worthy of the scholastics, and on recognizing it repeated in the doctor's argument, I wondered how soon it might be before we would be discussing how many angels could stand on the point of a needle.

Furthermore, the doctor in his argument for a conceivable spaceless substance calmly ignores the limits of the human mind, the impossibility of setting bounds to space. He says, "beyond the finite world there is nothing, there is no superficies of a containing body that touches it, and the world as a unit is not in space."

Now the words, "beyond the finite world there is nothing," are meaningless, if we remember how the human mind is bound to the conception of infinite space. In thought space admits of no minimum in division, and of no maximum in extension and hence it is impossible for the human mind to entertain the conception that beyond the finite world there is, "nothing."

In his fourth objection, Dr. O'Malley says: "Dr. Macdougall supposes that personality cannot exist except as a space-occupying body."

"He does not however define personality."

I take the second quotation first. If we limit the question of personality to that

which is the notion of it or conception of it in human consciousness, a conception evolved in human consciousness, as a result of the manifestation to consciousness in its experiences of the thing called personality, and not go seeking for something in itself which never has been made known to consciousness and never can be, I do not think we will go far astray. I think it was made quite clear in my original article, that I was dealing with the question of human personality, and the daily direct experiences of every one of us with ourselves, with our friends, and our associates, gives us such an immediate idea of personality, as no amount of analysis of the question can give us, but only serve to befog. My definition of personality would be a human individual, and a normal human individual has a persisting identity of consciousness.

This differs a little from the doctor's definition for he says as follows: "Anything which can have a separate existence is a substance, every existing substance is individual."

When an individual is complete in itself, has an entire nature, and is intrinsically independent, it is an hypostasis. If further an hypostasis is intelligent, it is a person, it has personality. That is all personality means with men who use language with precision."

Now if the doctor's definition of an hypostasis is correct, any animal is a person, unless he denies that animals have intelligence. This definition of personality is certainly not that held in law, religion, or ethics; and I see no good reason why it should hold good in philosophy with men who not only use language with precision, but also use their notions of things with precision, for things themselves are the realities, and language is merely representative.

"Personality cannot exist except as a space-occupying body."

I am rightly quoted. I contend for the truth of the above proposition, on the ground that the negation of the proposition is inconceivable.

Personality can be conceived as existing and yet not occupying space, that is the negation of my proposition.

Dr. O'Malley says such a conception is

possible. He says, "The *notion* of a space occupying body is altogether outside the *essence* of personality." Italics mine. Now we know nothing whatever of essence of personality as rendered to consciousness in experience; personality has been rendered to consciousness in experience, its essence which would correspond to a "thing-in-itself" never has been and never will be so rendered. If we read the above then in terms that mean something it should read as follows: "The *notion* of a space-occupying body is altogether outside the *notion* of personality" and we see the falsity of the proposition at once, for we have no notion of personality, that does not inevitably carry with it in the mind as an inseparable component the notion of a space-occupying body.

Even the doctor's own previous definition of personality is an argument against this last proposition of his. Does he not say, "Anything which can have a separate existence is a substance, every existing substance is individual. An individual when complete in itself and having an entire nature, and intrinsically independent is an hypostasis. An hypostasis that is intelligent is a person." At the very root of this idea of person, inseparable from it, is the idea of substance, and we have seen before how futile was the attempt to get a space-less substance.

Dr. O'Malley last of all uses the conception of God as a person. "He exists not as a space-occupying body. He is neither a body, nor does He occupy space. He is a spirit; He is infinite and He transcends space." "An intelligent being, a person existing with utter disregard to space is as readily, 'thinkable,' as anything else if you know how to think."

Now Dr. O'Malley forgets that the use of the term person as applied to the Eternal Power made manifest to us in the universe is wholly analogical.

If the doctor's own previous idea of a person or personality, as contained in his definition is compared with his own conception of God as a person, it will be seen at once that it is a pure analogy, that there is no essential correspondence. The Eternal Power made manifest to us in the phe-

nomena of the universe in itself transcends cognition.

The doctor's fifth and last objection is that I hold to a belief in the materiality of the soul. In this the final part of his criticism he begins by making a comparison between my experiment, and a lover who loses weight on being abandoned by his lady love. He says, "that is a case essentially similar to Dr. Macdougall's experiment," but he fails to point out the similarity.

It is common knowledge that the weight loss of the jilted lover is due to emotional worry and loss of appetite.

Does the doctor pretend that these causes occasioned the weight loss in my subjects after all known physiological causes of weight loss had ceased?

He opposes the opinion that the conception of consciousness and personality surviving bodily death, necessarily carries with it as a component the conception of a space-occupying organism and finally concludes that my contention of the ponderability of this organism is impossible on the ground that the soul is a substantial principle and has no basis in substance, that it is not extended, and is therefore not space-occupying and is therefore not material.

He seeks to prove this conclusion first, from the fact that we can form abstract ideas of goodness, being, truth, etc. He says "and such are evidently indivisible and simple acts of the mind," "an act of that nature is impossible, to an extended composite substance, a material agent, the brain, for example."

Now abstract ideas are states of consciousness like all other ideas, ideas have no existence in themselves and are but representative of modifications in consciousness, and these modifications of consciousness that correspond to abstract ideas are by no means indivisible, or simple, acts of the mind or consciousness, but are derived from those modifications of consciousness which have their origin in objective existence, and which reach consciousness or mind through well-known physical and physiological agencies.

In short modifications of the mind that correspond to abstract ideas, are as much the product of the interaction between ob-

jective existence, and subjective existence, (or the mind, or consciousness), no matter how remote the genesis may be—as is the simplest sensation of which we are capable.

"The human soul," says Dr. O'Malley, "is the source of activities that are independent of matter," "we apprehend abstract truths which *have nothing to do with matter*, such as justice, mankind, God, possibility, relation between ideas, logical sequences from premises." "Operations like these are spiritual phenomena, therefore the source of them must also be spiritual."

The italics above are mine, and if we substitute for these words, "have nothing to do with matter," the words, *have nothing to do with objective existences, the forms under which matter is presented to consciousness we shall see that no matter how obscure the origin, or how remote the genesis those modifications of consciousness known as abstract ideas have in reality sprung from simpler modifications of consciousness, corresponding to the perceptions of the outer world.*

If first we had no idea of such objective existences as men, how could the idea of mankind ever arise, or the abstract idea of justice which is a relation between men?

And if we had no ideas first of objective existence of any sort, which includes cognition of our own mental operations, how could the idea of God ever arise?

If there were no objective existence from which first consciousness could be modified to the possession of ideas, how could that modification of consciousness known as the perception of the relation between ideas ever arise? Indeed how could mind or consciousness itself exist if there was nothing objective to it for it to become conscious of?

If there were nothing objective to it for it to become conscious of, there would be no modifications of consciousness, and consciousness or mind in the absence of modifications of itself, not merely would cease to be, but simply could not begin, there could be no such thing as mind.

The fact of the matter is that all ideas or modifications of consciousness are a product of incessant interaction between mind or subjective existence, and objec-

tive existences, or matter in the forms in which it is rendered manifest to consciousness.

The doctor makes an argument of self-consciousness, that it proves the soul's differentiation from matter. "The same soul in self-consciousness is at once fully subject and object of the mental action an operation utterly impossible to matter."

Now if we knew exactly the ultimate nature of matter, which we do not, it might be very well to make this assertion.

We know no more about the ultimate nature of matter, than we do about the ultimate nature of mind.

How do we know that such an operation as self-consciousness is impossible to matter?

Of course if we make the assertion that there is no possible modification of the substance of the universe that can attain consciousness, then it might be in order to assert that a self-conscious substance was an impossibility.

But we must remember that it is only an assertion, and that it is quite conceivable that there may be possible a modification of the substance of the universe that can functionate so high as to reach consciousness and consciousness once reached, self-consciousness could of necessity be derived, for self-consciousness is merely a consciousness of the modification of consciousness.

Indeed were the theory that death ends personality and consciousness true, then we would have in the protoplasm of the human brain such a modification of the substance of the universe.

I could point out too that in self-consciousness, or consciousness of self, while the self is the subject of the mental modification, the self or subject is not the object, the object is the modification of consciousness only.

If the soul is a spiritual principle without extension, non-spatial, how do we account for its being bonded and linked to the carbon compounds as they exist in human protoplasm? The organic linking seems to be quite intimate.

Mind and body go together in space to make up the personality. In life body and mind appear absolutely inseparable. When

you go on a railroad journey or ocean voyage you have no fear that your body will go on and your spiritual principle be left behind. The same force acts on both whether it be a moving train, or steamer, or the law of gravity. The bond appears inseparable except by the event of death.

Suppose then that after death we exist as spiritual principles only, we have no extension, no form, no relations to space, having no substance, not even capable of being acted upon by the wave motions of space filling ether. In short we are pure consciousness or idea as the idealists will have it. We are suddenly deprived of that protoplasmic organism, whose interaction and responses to other objective existences really endued this consciousness, which now alone survives and constitutes the self. We have no objective existence whatever, because we are non-spatial, formless, and without substance, all those space relations of consciousness, and objective existence relations of consciousness, and it follows time relations of consciousness, have been raised in us for nothing, we enjoy each by ourselves a sort of subjective immortality, for we no longer have an objective existence to each other. As well might this consciousness have died when the protoplasm of our brains died, because no longer being capable of responding to any sort of objective existence whatsoever, not even the pulsations of the universal ether which might were we still of substance act upon us to modify us to a perception of color, form and perhaps sound, to keep alive society, art and music, we are doomed because no longer capable of being modified in any way, to lose even the consciousness of this subjective existence.

There is still another reason why it appears to me, that if human personality survives death, it can only be as a space-occupying organism still subject to the law of gravity. There are quite good grounds for believing that the earth does not rush through the ether of surrounding space, but in its motion carries along with it a great globe of ether many times the size of our earth.

So great an authority as Mendelef was quite convinced that the ether has density, and there are some facts that give good

ground for this belief. *This earth accompanying globe of ether may constitute a real world above the storm zone of the earth's atmosphere* (which is not very high, relatively) *to beings constituted entirely different from us, who are yet subject to gravitation.* If we suppose the mode of existence to be as spiritual principles not subject to gravitation, then it follows that ever since human beings began to die upon the earth, the complex pathway of the earth around the sun in space, and of the earth as a part of the solar system moving in space is littered with these same non-gravitative spiritual principles. Between the time of a man's death and the time of the burial of his body, an average of three days, as a spiritual principle he would be separated from his body and the place he died by a distance of nine million miles, the distance the earth would travel in three days' time. Can we construct a conception of an orderly future life out of such conditions?

The march of science has certainly destroyed all faith in a physical resurrection.

Belief that human personality survives death, implies some mode of survival. What is the mode of survival, is a legitimate question. That a close investigation of the phenomena accompanying death, may lead to some definite knowledge, is quite within the limits of possibility.

SURGICAL NOTES.

In spina bifida, if the protrusion is a small one, operation can often be avoided by careful replacement into the spinal canal and the application of a disc of pasteboard held in place with adhesive strips and a bandage.

To reduce a congenital inguinal hernia in an infant an excellent method is that recommended by Owen of holding the child up by its feet. In this way the omentum is prevented from dropping into the funicular process during the reduction.

To avoid an unsightly scar after operation for torticollis the cutaneous incision should be so planned that the cicatrix will lie parallel with the clavicle. This can be done by slightly drawing up the skin before it is incised. In dividing the sternomastoid care should be taken not to wound the deep cervical fascia.—*Inter. Jour. of Surg.*

ETIOLOGY AND DIAGNOSIS.

The Diagnosis of Uterine Cancer.¹—Cronson in an excellent resume of the literature of cancer of the uterine cervix gives the following symptomatology:

1. It is a disease of middle life occurring from the thirtieth to the fiftieth year.

2. It occurs rarely in nullipara.

3. There is no characteristic sign; but bleeding or blood-stained discharge is usually but not always present. The bleeding may be:

- a. Slight, only a show at irregular intervals as on exertion, sexual intercourse, using a douche or straining at stool; or it may be slight but constant, the patient's clothes being stained on taking them off at night.

- b. In other cases bleeding may be more profuse, simulating a prolonged or irregular menstruation, or a return of the menses after the menopause.

- c. In still other cases severe hemorrhage may occur, appearing either as a result of some unusual exertion, or during menstruation, or the cause may not be apparent.

4. In a small percentage of the cases bleeding may be absent, but usually some other sign such as an unusual leucorrheal discharge calls attention to the growth. In a small percentage of the cases all symptoms referable to the growth may be absent for a long time.

5. Pain caused by the growth usually occurs later in the course of the disease and must be differentiated sharply from pain arising from pelvic trouble independent of the cancer, such as inflammatory conditions of the tubes, ovaries, etc.

6. It is evident that all women suffering from uterine bleeding or other symptoms referable to the uterus should be examined as soon as possible, and if the diagnosis is not clear, the uterus should be curetted, or a small piece of the cervix excised for competent microscopical examination.

7. All symptomatic aberrations referable to the generative organs of women about the menopause should be looked on as a

possible beginning of malignant disease and an immediate examination should be urged.

The course of the disease is rapid. It passes beyond the limits of the uterus proper (and hence becomes practically incapable of complete eradication) in a period which varies from thirty days to six months from the outset of the earliest symptoms. When it runs its course undisturbed patients rarely live more than three years. About three quarters of them die within two years; about a third within one year after the first manifestations of the disease.

The Significance of Pain in Pelvic Disease.¹—Novak in his interesting paper says that a careful physical examination is of first importance in the diagnosis of pelvic disease, but interesting information will also be derived from the character and distribution of the pelvic pain. 2. The exact nature of the disease should be determined in a given case, as nearly as possible, and not the advisability or inadvisability of an operation alone. 3. Pain in the pelvic viscera is governed by the same laws which apply to the causation of pain in the other abdominal viscera. 4. Neurasthenia may develop from neglected pelvic disease, with diffusion of pain and characteristic symptoms in other parts of the body. 5. Persistent neurasthenia following pelvic operations is frequently responsible for the continuance of unpleasant symptoms. 6. Hysteria with pelvic symptoms has the same characteristics as when associated with other diseases. 7. The removal of normal ovaries for pelvic pain is now regarded as unjustifiable. 8. Fibrocystic ovaries are often found in women who are in perfect health. Operation on such organs should be conservative. 9. Pain is the resultant of a lesion and a patient and in order to understand its significance both these factors must be carefully studied.

To facilitate taxis in hernia cases the bowels should be thoroughly emptied by an enema and the patient made to pass his urine, or, if necessary, catheterization resorted to.

¹R. Cronson, M. D., *Archives of Diagnosis*, April, 1908.

¹E. Novak, M. D., *Am. Jour. of Obs.*, April, 1908.

TREATMENT.

The Treatment of Indicanuria.¹—In a comprehensive review of the subject of indicanuria Eason discusses treatment as follows:

Dietetic.—Inasmuch as indicanuria is caused by the action of certain bacteria upon the proteids, it is essential in most cases to restrict the amount of this type of food. The rigour with which this is to be observed will of course depend on the severity of the condition. The rules for mastication as formulated by Horace Fletcher are also of much importance. Hygienic and proper exercise in the open air is of vast importance in aiding metabolism, increasing elimination and strengthening the digestive functions.

Medicinal.—Medicinal intestinal antiseptics are damned with faint praise, and patients fail to do as well as expected when treated in this manner. It is hardly advisable to use such preparations for protracted periods, and the usefulness of the protective members of the intestinal flora may be harmfully influenced.

Lavage of the colon and stomach may sometimes prove necessary.

Bacterial Antagonisms.—Tissier succeeded in analysing the bacterial contents, and having determined the special bacillus, he was able to obtain very good results by modifying the diet and infecting the individual with microbes antagonistic to the ones at fault. The method is one which cannot become generally available. It is more practicable to determine whether the flora is saccharo- or proteo-lytic; and as Combe suggests, this information is sufficient to determine the *regime* and the nature of the antagonistic bacteria which might be employed. The diet should be such that the growth of the *flore fondamentale* is encouraged and the *flore surajoutée* discouraged.

Sour Milk.—In 1892 Rovighi, an Italian physician, drank daily a litre and a half of milk subjected to lactic acid and alcoholic fermentation. He found that in a few days the products of intestinal putrefaction in his urine were greatly reduced. In 1897

Herter reduced the amount of indican in dogs by injecting pure cultures of lactic acid bacilli into the small intestines. These and other observations explain why sour milk is of such value as a medicine, and why lactic acid will control certain cases of infantile diarrhoea.

Mackee's personal observation is that sour milk will control the majority of cases of indicanuria.

Metchnikoff and his school are of opinion that sour milk is of benefit not alone in virtue of its lactic acid, but also on account of the large number of desirable bacteria contained therein, which are able to colonize in the intestines, but Herter's most recent communication throws doubt upon the Metchnikovian theory. Mackee found that although lactic acid will control indicanuria to some extent, the indican will return to its original degree very soon after the lactic acid is discontinued. Buttermilk and milk soured by native bacteria have more thorough and more enduring favorable effects. Even better results are obtained if milk be fermented by certain foreign bacteria. When employing such preparations as the lactobacilline tablets from Paris, the lactone tablets from Detroit, or Yogurt capsules, it should be remembered that we are only giving relatively small numbers of bacteria, and they must be given over an extended period of time, and combined with a favorable diet before their effects become clearly manifest. Pure cultures are especially convenient for those individuals who cannot tolerate sour milk, but the results are not so striking.

Treatment of Abnormal Rigidity of the Cervix Uteri.¹—In a practical discussion of the subject Mason concludes: 1. That where immediate delivery is demanded in the presence of an undilated and rigid cervix, multiple deep incisions from the border of the external os to the utero-vaginal junction furnish the most rapid and safest method of emptying the uterus.

2. That there is no danger of the incisions tearing in cases under full term, or in cases at full term, where the pelvis is normal and the fetus is of moderate size.

¹J. Eason, M. D., F. R. C. P. Scottish Med. & Surg. Jour., May, 1908.

¹N. R. Mason, M. D., Boston, Mass., Boston Med. and Surg. Jour., April 30, 1908, p. 571.

3. That there is no risk of hemorrhage when clamps are employed before making the incisions.

4. That the chance of septic infection is no greater than after the lacerations occurring at the time of normal delivery.

5. That the scars in the cervix vaginal vault cause no trouble in the course of subsequent pregnancies and labors.

Eczema of Extremities.¹—In cases of acute erythematous eczema of the extremities, when the itching and burning are very pronounced and annoying, the application of a dilute solution of adrenalin to the lesions will produce a rapid blanching of the parts and allay the intolerable distress. After the acute symptoms have subsided an ordinary Lassar paste, with or without ichthylol, wherein a small amount of adrenalin solution has been incorporated, will hasten the restoration to the normal.

The Treatment of Scabies.—Babies and adults affected with scabies or pediculosis should be bathed in warm water, to which borax and tincture of green soap have been added, and allowed to soak for half an hour. After drying, a two per cent. unguentum hydrargyri ammoniati applied night and morning for a week is all that is necessary to effect a cure.

Babies and children should have an ointment of balsam of Peru, $\mathfrak{Z}\text{ii}$; precipitated sulphur, $\mathfrak{Z}\text{i}$; rosewater ointment, $\mathfrak{Z}\text{ii}$, applied twice a day. For adults an ointment composed of naphthol, gr. lxxx; green soap, $\mathfrak{Z}\text{vi}$; rosewater ointment, $\mathfrak{Z}\text{ii}$, $\mathfrak{Z}\text{ii}$ to be thoroughly rubbed into the skin twice a day, will result in the death of the parasite in one week. The patient is then to take a second bath, put on clean underclothing, and report. Two teaspoonfuls of precipitated sulphur sprinkled between the bed sheets is a useful adjuvant.—*Cocks*.

Little support can be expected from a pessary in cases in which the posterior cul de sac is shallow or in which the perineum is not intact.

DIETETICS AND HYGIENE.

Milk diet¹.—A writer in the *Medical Press and Circular* discusses milk diet and says that it presents its indications at each turn in medical practice. Yet many practitioners, says Prof. Surmont, complain of the difficulties of getting it accepted by their patients, who pretend to be unable to support it.

It is important to understand that many patients are only refractory in appearance to milk diet, and ill-support it because they do not know how to take it in a suitable form.

The maladies for which the milk *regime* is indicated may be divided into two groups—acute and chronic affections.

The utility of milk diet in acute diseases is patent, whether it concerns general infections, where renal complications are possible, as eruptive fevers, scarlatina, typhoid, spotted fever, septicæmia of divers origin, or in those affections in which phenomena of intoxication are predominant as diphtheria, tetanus, tonsillitis, pneumonia, cystitis, acute nephritis, uræmia, hepatic insufficiency and eclampsia.

It must be remembered that in acute febrile affections, digestive secretions are reduced, and consequently the susceptibility of the digestive tract must be taken into account before prescribing large quantities of pure milk.

Wherever digestive fermentation is well marked with a furred condition of the tongue, a saline purgative and a purely hydric diet should precede by 24 hours the ingestion of milk.

It is especially in chronic affections of the digestive tract, liver, heart, kidneys, urinary organs, skin and such intoxications as mercurial, saturnine, and certain auto-intoxications (uræmia), that the milk diet has given considerable therapeutic results.

In chronic maladies it is of the highest importance that milk be well tolerated by the digestive tract, since in order to produce the desired results, employment must be prolonged for weeks and months.

In certain dyspeptic patients, and especially those who present well-marked buty-

¹Am. Jour. Clin. Med., May, 1908.

¹May 20, 1908, p. 561.

ric fermentation, the milk, as soon as it arrives in the stomach, becomes decomposed and provokes tympanism, acid regurgitations, pain, vomiting, or diarrhœa—all the symptoms of indigestion.

Patients who have suffered from these troubles acquire a repugnance for the *regime* and refuse it absolutely. A previous disinfection of the stomach by a purgative and hydric diet (vichy water) will prevent these accidents.

Should the milk be given in its natural state or boiled? As regards the question of digestibility, the former is more easily digested, it is certain, but, on account of the frequency of bovine tuberculosis, it is always safer to boil the milk before taking it unless its origin is certified. In any case, in towns boiled milk only should be prescribed.

As regards the quantity of milk to be absorbed in the day, the average would be about four quarts, but this amount is not easily tolerated by patients, who can scarcely consume more than three quarts, and frequently less. A glass of milk every two hours, or three pints a day, is the best way for a beginning. Afterwards the dose might be increased to double that amount as the patient may tolerate it.

It is important that each glass of milk should be taken by sips every two or three minutes, and not all at once, which might produce a large clot of casein, a frequent cause of indigestion. Hot milk should be preferred, as it is absorbed more readily, but when there is a tendency to vomiting, cold milk is more suitable.

The mouth should be rinsed with some alkaline water, Vichy or Vals, for instance, after each little repast, to prevent the accumulation of the residue of milk in the mouth, which ferments and develops inflammation of the mucous membrane of the cavity, as well as foetidity of the breath.

Some patients show a complete disgust for milk which a little persuasion overcomes. The savour, in any case, can be masked by the addition of a little tea, coffee, chocolate, sugar, salt, seltzer water, cherry laurel water, or different liquors, Kirsch, rum, cognac, when the employment of these different substances is not contra-indicated.

Certain patients present an absolute gastric intolerance for milk (furred tongue, foetid breath, gastric heaviness, palpitations, vertigo). For these the cream should be carefully removed, and lime-water or Vichy water given with the milk. Where diarrhœa is provoked by the milk *regime*, it is due to the coagulation of the liquid in an hyperacid stomach. In such cases milk and alkaline water should be given in equal parts, or the milk should be sterilized.

It sometimes happens that, in spite of all the precautions observed, cows' milk is not tolerated. Recourse must be had to asses' milk or kephyr. The former contains more sugar or lactose than cows' milk, but is less rich in albuminoids and fatty matter. It is less nourishing, but being more easily digested, it is particularly suitable for weak stomachs. However, it is difficult to obtain in towns.

A better method consists in utilizing kephyr, which as everyone knows, is composed of cows' milk subjected to special fermentation due to the combined action of a yeast and a microbe, *dispora caucasica*.

Under their influence, the lactose gives lactic acid, alcohol, and carbonic acid. The casein, precipitated, undergoes a primary digestion, transforming it into peptone.

Kephr is an acidulated and sparkling drink.

The ferment can be bought in grains and added to the milk at a known temperature, but there exist special kephyr manufactories which give every guarantee of a pure article.

NOT ENLIGHTENING.—Doctor Blank, for about twenty years a professor at the University of Virginia, was on the eve of a trip to Europe, to be absent two years. He made a farewell address to his class after his last lecture, and in pathetic but, to the class, rather harrowing tones, said in closing:

"Yes, I am about to part with you. This is more than distressing to me. Many happy years have I spent with you, but I must now leave for a brief period. Would, my dear boys, that there was a window in my breast, that you might see the inmost recesses of my heart."

A stripling in the rear of the room, nervous from the harrowing recital preceding these remarks, piped out in a shrill voice:

"Professor, would a pain in the stomach do?"—*Lippincott's*.

GENERAL TOPICS.

The Family Physician and the Public.—

There yet remains a means of educating the public which I believe will be the most potent of all. This rests in the hands of the family physician—the man who has the care of the household, who watches the growth of the children, who sees the father and mother bend under the strain of life, react and again assume their work, the counselor of the family—he it is who can carry into the homes of this country the judicious truth concerning disease. Well-educated people have recognized that the wave of specialism which threatened to obliterate the family practitioner was dangerous for the welfare of the whole. The trouble is that we all consider ourselves, when ill, as peculiar examples of some disease, when, as a matter of fact, all we need is the counsel and advice of a sound minded family practitioner who has known us and our families for many years. This does not in the least deny the great advantage of having the benefit of special knowledge in reference to a special subject.

There is a distinct reaction, I believe, against the obliteration of the family practitioner. The well-educated family practitioner now has a new duty. He it is who should be the instructor of the family. This is particularly true in relation to the subjects which in medicine can not with propriety be taught the public in masses; these subjects may be taught most appropriately to the parents and, if need be, the children by the physical counselor of the family.

A great duty rests on the practitioner of medicine to-day. He must not shirk it; he must rise to his new burden, accept it and bear it. The reward to the medical profession for taking this new burden of judicious publicity in medicine will be a broader life for the practitioner, a greater consideration for his fellow man, better citizenship and the recognition by the world that the medical profession is a great public benefactor.—*Burrell.*

A Question of Fees.— There exists a tendency among some of us—men who are, for the most part, honest and honorable—which is, it seems to me, below the dignity of our calling. I refer to the tendency to regulate one's fees according to the means of his patient. It is well that a man should have a more or less definite estimate of the value of his services, a fixed maximal charge for work of a certain character, a charge which, in justice to himself, he should always make, unless he has reason to believe that the patient is not in condition to meet it. He will often, with a large proportion of his patients, perhaps, be obliged to accept less than the value of his services. But that he should speculate on the wealth of the rich, that he should demand exceptional recompense from the millionaire because of his wealth, is to make medicine a trade; is to bring distrust and suspicion and discredit on his profession; is to put a serious obstacle in the way of all the great reforms which we as physicians and sanitarians hope to accomplish.—*Thayer.*

The Treatment of Styes.—Styes occur at all ages, (*Med. Standard*), but they are more common in children and young adults, and often appear in crops. As a rule, the patient is out of health, and suffers from constipation, acne spots, or errors of refraction, such as hypermetropia, or hypermetropic astigmatism. Until suppuration actually occurs, hot boric acid fomentations should be used, and the patient should be purged. When suppuration has occurred, the eyelash, which is usually in the center of the yellow area where the pus is pointing, should be pulled out, and then, if necessary, the swelling should be incised, and again hot boric acid fomentations applied. Syrupus ferri phosphate, in drachm doses, should be given twice or three times daily after food. Calcium sulphide, in doses varying from $\frac{1}{8}$ to $\frac{1}{2}$ a grain for an adult, given twice daily, has been recommended in case of recurrent styes.

LITERARY NOTES.

It is not hard to understand the remarkable success of Dr. Greene's new but already well known manual on *Medical Diagnosis*. One has only to consult its wealth of practical material and get in touch with the thoroughness and care with which each subject has been treated, to learn why a second edition has become necessary within seven months from the appearance of the first. Dr. Greene is a prominent physician of the Northwest. A broad experience in the practice of medicine and unusual talents as a physician fit him particularly for the authorship of a comprehensive textbook on diagnosis. It is safe to say that no work of its size contains more of the real essentialities of medicine. Its freedom from useless details and verbiage is refreshing, and yet nothing of importance is omitted. So little has transpired since the first edition that slight revision has been necessary. The most noteworthy addition is a valuable description of opsonic technic. This is admirable and is especially well illustrated.

The physician who does not possess and frequently consult Greene's *Diagnosis* is losing much and denying himself benefits in no other way so easily and quickly obtainable. Its constant use stands for greater familiarity with modern diagnostic technic and consequently greater accuracy in diagnosis. The practical utility of this excellent book is its most eloquent testimonial.

The rapidity with which successive editions of Thresh's "*Simple Method of Water Analysis*"—the sixth edition of which is now announced by P. Blakiston's Son & Co., of Philadelphia—proves that it fully meets the requirements responsible for its writing. The method advocated by

the author is now in use in the English Army and Navy, where many copies of the book have been sold.

A new edition—the third—of Parkes and Kenwood's "*Hygiene and Public Health*" has been brought out in this country by P. Blakiston's Son & Co., of Philadelphia. This new edition has been very carefully revised. A certain amount of new matter has been introduced, but some parts of the previous edition have been compressed and abbreviated, so as to maintain the work in a convenient form for ready reference.

In the eighth edition of Dr. Frederick Taylor's *Manual of the Practice of Medicine*, which has been brought out in this country by P. Blakiston's Son & Co., of Philadelphia, every part of the work has been carefully revised and the necessary corrections and additions have been made so as to bring the whole fully up to date. There are few subjects in which alterations have not been made and the most obvious changes will be found under the heads, sleeping sickness, yellow fever, the examination of the nervous system, acute myelitis and softening, the diagnosis and treatment of phthisis, the examination of the heart and vessels, gastric and intestinal disorders, the diseases of the pancreas, the diseases of the blood, leucaemia and diabetes mellitus. Entirely new matter has been introduced on the subject of opsonins and opsonic methods, paratyphoid fever, kala-azar, senile paraplegia, diseases of the sympathetic nervous system, genital hypertrophic stenosis of the pylorus, and ochronosis. The work makes an octavo of 1,111 pages with 8 plates and 46 text illustrations.

Medical Diagnosis.—A manual for Students and Practitioners. By CHARLES LYMAN GREENE, M. D., Professor of the Theory and Practice of Medicine in the University of Minnesota; Attending Physician, St. Luke's Hospital, the City Hospital, and the St. Paul Free Dispensary, etc. Second Edition. Revised, with 7 Colored Plates and 241 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1907.

Not with a desire to write a treatise on hernia, but rather to briefly express his own views has Dr. R. W. Murray, author of Hare-Lip and Cleft Palate, etc., prepared his little monograph on *Hernia, Its Cause and Treatment*. The American edition of this work has just been announced by P. Blakiston's Son & Co., of Philadelphia.

NOTES ON MODERN PHARMACEUTICAL REMEDIES.

"The medical profession assuredly has a right to demand of the pharmaceutical manufacturer that he shall make good his claims concerning the superiority of his products in the matter of quality, purity, uniformity and pharmaceutical skill; that he shall be honest and frank with the medical profession in regard to the quantities or proportions of the active or potent ingredients in definite doses; and that his literature and published statements shall be free from misrepresentations, unwarranted claims, and everything calculated to mislead or deceive.

On the other hand the medical profession owes it to right, justice and honest progress not to arbitrarily reject any legitimate product without a fair open above board investigation; and to never condemn nor stigmatize any pharmaceutical manufacturer on the un-American basis that a person is guilty until proven innocent."—*American Medicine*, Jan., 1908, p. 54.

"The physician is entitled to know the character, source, action, incompatibles, uses and contra-indications of modern pharmaceuticals, and to get that information from sources not interested in their manufacture, sale or exploitation. The descriptions which follow are absolutely unprejudiced, and to the best of our knowledge true statements of fact."—*American Medicine*, May, 1908, p. 243.

STYPTOL.

(Continued.)

Description—A microcrystalline, yellow powder, readily soluble in water. The reaction is slightly alkaline toward litmus. Melts at 221-230° F. with slight decomposition. It contains 75 per cent. of cotarnine and 25 per cent. of phthalic acid. Supplied in the form of powder and tablets. The tablets have a pink sugar-coating, and contain $\frac{3}{4}$ grain styptol each. They rapidly dissolve in the stomach.

Formula—Styptol is the neutral phthalate of cotarnine of the formula $(C_{12}H_{18}O_8)_2 \cdot C_6H_4(COOH)_2$.

Action—Styptol is a hemostatic and analgesic; both its components, the cotarnine as well as the phthalic acid are said to possess hemostatic properties. On the uterus it exerts a sedative action.

Uses—Styptol is recommended in uterine hemorrhages, where an internal hemostatic

is indicated except it be more important to induce a contraction of the womb, as after labor. More especially in: severe menorrhagia without evident pathological causes; hemorrhage owing to inflammatory conditions of the mucous membrane, particularly after curettage and miscarriage; hemorrhage during pregnancy; purely climacteric hemorrhage; hemorrhage from fibroids; hemorrhage owing to inoperable carcinoma; secondary hemorrhage, owing to adnexal disease or pelvic cellulitis, as well as in fixed malpositions of the womb; dysmenorrhea; hemorrhages from the urethra, and as a local hemostatic.

Dosage—For internal use as a uterine hemostatic, two $\frac{3}{4}$ grain tablets three times a day. If a prompt sedative is required, particularly in dysmenorrhea, three tablets, three to four times a day. For prolonged administration, one tablet three times a day between menstrual periods, while with the appearance of the menses, the dose is doubled.

Special Considerations—It is reported free from by-or after effects and can be administered during pregnancy, as it does not cause uterine contractions.

References—Aarons, London; British Gynecological Journal, 1907, February; Abel, Berlin; Berliner klin. Wochenschrift, 1905, No. 34. Chiappe and Ravana, Genoa, Archivio Italiano di Ginecologia, 1904, No. 2. von Ellischer, Budapest; Wiener Med. Wochenschrift, 1904, Nos. 32-33. Fitch, New York, Buffalo Medical Journal, April, 1908. Handfield-Jones, London, Folia Therapeutica, 1907, No. 1. Hensel, New York; Medical Fortnightly, January, 1908. Kehler, Heidelberg; Monatsschrift f. Geburtshelkunde und Gynecology, 1907, No. 5, page 709. Lockyer, London; Annals of Gynecology, September, 1907. Otto Maier, New York, American Journal of Obstetrics, December, 1907. Mohr. Therapie der Gegenwart; 1905, No. 8. v. Ramdohr, New York, New York Med. Journal, 1907, March 9, page 438. Sunderland, London, Folia Therapeutica, April, 1908. Wittthauer, Halle, Centralblatt fuer Gynecologie, 1904, No. 33.

Manufacturers—Knoll & Co., Manuf. Chemists, New York.

CALCALITH.

Description—Compressed tablets.

Formula—Each tablet contains pure Calcium Carbonate, gr. 10. Lithium Carbonate gr. 1. Colchicine pure gr. 1-500 Aromatics q. s.

Action—Calcalith is claimed to effect elimination of the waste or by-products of metabolism by stimulating normal physiological processes and correcting their derangement.

Uses—Recommended as serviceable for correcting the various manifestations of mal-assimilation and defective elimination, as manifested by autotoxemia and the group of maladies variously classified clinically as rheumatism, gout, etc.

Dosage—One tablet every two to four hours with copious drinks of water.

Special Considerations—Calcalith is claimed to be non-irritant and to exert no objectionable effect in the stomach.

References—Dr. A. C. Croftan, Chicago, Ill., Jour. A. M. A., March 28, 1903, also Croftan's Clinical Urinalysis, p. 197.

Manufacturers—The Abbott Alkaloidal Company, Chicago, Ill.

PROTAN.

Description—Protan or tannin nucleoproteid is a chemical combination of casein and tannic acid, representing approximately 50 per cent. of the latter. It is a light brown powder, practically odorless and tasteless. Protan is insoluble in water or dilute acids.

Action—Protan is very slightly, if at all acted upon in the mouth or stomach, but in the intestines it is markedly astringent. It does not coagulate albumen or precipitate peptones.

Uses—Protan may be employed in all forms of diarrhea in which tannic acid is indicated.

Dosage—0.3 to 2. Gm. (5 to 30 grains) every hour or two as required.

References—"New and Un-Official Remedies" Jour. of the American Medical Association, Nov. 30, 1907.

Special Considerations—Protan is non-irritant and has the advantage of passing through the stomach practically unchanged to exert its specific astringent effect in the intestines.

Manufacturers—H. K. Mulford Co., Philadelphia, Pa.

SANATOGEN.

Description—Sanatogen, a combination of casein 95 per cent. and glycerophosphate of sodium 5 per cent., is a fine white powder, practically tasteless and odorless, and freely soluble.

Action—Sanatogen is a nutrient tonic of high proteid value. It is claimed to stimulate metabolic activity and by reason of its nutritive properties and ready absorbability to promote general bodily nutrition.

Uses—This product is recommended in gastro-intestinal diseases, tuberculosis, rickets, scrofula, typhoid fever, diabetes, neurasthenia and in convalescence from all diseases. Its ready absorbability makes it especially useful as a nutrient enema.

Dosage—One to two teaspoonfuls 3 or 4 times a day in water, milk, broth, soup or other medium.

Special Considerations—Sanatogen is non-irritating and leaves practically no residue in the intestinal tract. It is free from carbohydrate material, and is therefore useful when such is interdicted. Its phosphorus content is claimed to be almost entirely assimilated by the organism.

References—Tunncliffe, Archives Internationales de Pharmacodynamie et de Therapie, Vol. XVI; Burnet, The Practitioner, October, 1905; Hoppe, Munchener Med. Woch., 1904, No. 51; Ewald, Zeitsch. fur diatetsche und physikalische Therapie, 1903-1904, Bd. VII, Heft 10, and others.

Manufacturers—The Bauer Chemical Co., New York, N. Y.

ADRENALIN.

Description—Adrenalin is a yellowish white crystalline powder, derived from suprarenal glands by the method of Takamine. It is an alkaloid possessing the characteristic action of the gland from which it is obtained.

Action—*Locally*: Adrenalin is astringent, styptic and a true vaso-constrictor. A solution of 1:10000 applied to the mucous membrane of the eye or nose produces a marked ischemia persisting for a variable length of time.

Internally: by the mouth or by hypodermic injection adrenalin produces a

prompt constriction of the blood vessels, followed by a rapid and marked increase in blood pressure. By stimulation of the pneumogastric or vagus the heart rate is decreased in frequency, and by stimulation of the heart muscle, its force is increased.

Uses—As the chloride in solution adrenalin is used for arresting hemorrhage from the mucous membranes, or for rendering the field bloodless in operations on the eye, nose and throat. It has been recommended for hay fever, asthma and chronic epistaxis.

Internally adrenalin has been found efficient as a rapid, diffusible heart stimulant, and especially serviceable for combatting the circulatory condition attending shock.

Dosage—Adrenalin is used principally as the hydrochloride in 1:1000 solution. Internally, 0.3 to 2. Cc. (5 to 30m.) Hypodermically, 1 to 15m. diluted with sterile water. Locally, solutions may be used up to 1:15000.

Special Considerations—Adrenalin is preferable to the crude gland, for obvious reasons.

References—A. S. Green, M. B., B. S., Eng., Brit. Med. Jour., May 10, 1902; E. Fletcher Ingals, M. D., Chicago, Jour. A. M. A., Apr. 17, 1901; J. A. Stucky, M. D., Lexington, Ky., Jour. A. M. A., Feb. 21, 1903; James Barr, M. D., Liverpool, Brit. Med. Jour., Mar. 19, 1904; S. Solis-Cohen, M. D., Amer. Med., Sept. 7, 1901; and many others.

Incompatibles—Adrenalin has the usual incompatibles of the alkaloids. It should be used with great care internally as it may prove toxic or its prolonged administration may lead to glycosuria or arterio-sclerotic changes.

Manufacturers—Parke, Davis & Co., Detroit, Mich.

NEWS ITEMS.

The Medical Era's Gastro-Intestinal Editions.—The Medical Era, St. Louis, Mo., will issue its annual series of Gastro-Intestinal editions during July and August. In these two issues will be published between 40 and 50 original papers of the largest practical worth, covering every phase of diseases of the Gastro-Intestinal canal. Sample copies will be supplied readers of this journal.

The graduating class of the Department of Medicine of the George Washington University, numbering 45 who received the degree of Doctor of Medicine at the commencement exercises June 3, 1908, has announced to the University

authorities the establishment by the class of a research fellowship. This fellowship will be known as the "Class of '08 Fellowship" and will have an annual fund of not less than \$300.

The Fifth Pan-American Medical Congress will take place in Guatemala, Central America, this year from the 5th to the 10th of August inclusive. The trip can be made from New York, New Orleans or San Francisco by steamer directly to Guatemala, returning by Mexico and Cuba to the Eastern States, Mexico and New Orleans to the Eastern States and Middle West, Mexico to the Middle States and Far West.

Any physician or surgeon of good standing desiring to participate in the Congress can send the title of their papers to the following secretaries:

General Medicine—Dr. Judson Daland, Philadelphia.

General Surgery—Dr. Emmett Rixford, San Francisco.

Hygiene, Demography and Epidemiology—Dr. T. Darlington, New York.

Nervous and Mental Diseases—Dr. Chas. Hughes, St. Louis.

Tropical Medicine—Dr. John Swan, Philadelphia.

Military Sanitation—Dr. L. L. Seaman, New York.

Ophthalmology—Dr. Bert Ellis, Los Angeles.

Nose, Throat and Ear—Dr. W. S. Bryant, New York.

Pathology and Bacteriology—Dr. Walter Chase, Boston.

Gynecology, Abdominal Surgery and Obstetrics—Dr. H. P. Newman, Chicago.

Children's Diseases—Dr. C. G. Kerley, New York.

The itinerary of the trips has not been made as yet, but will be included in the next notice.

The Grand Legion of the Red Cross is the name given to a trained volunteer army of first aid, which is being organized by the American National Red Cross. The Grand Legion is made up of four or more legions, each legion has four relief columns, each column four detachments, and each detachment four squads. The first relief columns were formally organized on January 22, 1908, in Brooklyn, under the direction of Dr. Glentworth Butler, who was assisted by Major Charles Lynch, of the Medical Department of the U. S. Army, who has been specially detailed by the Surgeon General to aid in the work. The members of the Legion will be taught to give first aid under all conditions, and will be prepared to serve as a body in time of need. They will not be obliged to serve in the army hospital corps in time of war, but may do so if they wish. The chief work of the Legion will be, both directly and indirectly, a crusade against preventable accidents, and it is estimated that about two-thirds of the 10,000,000 accidents a year in the United States are preventable. The Grand

Legion will not be composed of men alone; each relief column will eventually have attached to it a relief corps of women trained in first aid and home nursing. Further information concerning this work may be obtained at the New York State Branch of the American National Red Cross, 500 Fifth avenue, New York.

A New Southern Medical Journal has recently been established and will be issued from Nashville, Tenn. Its title will be "*The Southern Medical Journal*." Dr. J. A. Witherspoon, Nashville, Tennessee, is editor-in-chief. About fifty collaborators and as many more regular contributors among the leading physicians of the fifteen Southern States have been secured. The first number will appear June 5.

BOOKS RECEIVED.

The Harvey Lectures—Delivered under the Auspices of THE HARVEY SOCIETY of New York, 1906-1907. Published by Lippincott Co., Philadelphia and London, 1908.

Scientific Nutrition Simplified—By GOODWIN BROWN, A. M. Published by Fred A. Stokes Co., New York, 1908.

Hydro Therapy—By SIMON BARUCH, M. D. Third Edition, Revised and Enlarged, with Numerous Illustrations. Published by William Wood & Company, New York.

Nursing the Insane—By CLARA BARBUS, M. D., Woman Assist. Phys. in the Middletown State Homeopathic Hospital, Middletown, N. Y. Published by the MacMillan Co., New York, 1908.

The Mother's Year Book—By MARION FOSTER WASHBURN. Published by the MacMillan Co., New York, 1908.

Electrical Treatment—By WILFRED HARRIS, M. D., F. R. C. P. Illustrated. Published by W. T. Keener & Co., Chicago, Ill.

The Opsonic Method of Treatment—By R. W. ALLEN, M. B., B. S. (London), Pathologist to the Royal Eye Hosp., London. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Pa. Price \$1.50 net.

Subcutaneous Hydrocarbon Protheses—By F. STRANGE KOLLE, M. D. Published by the Grafton Press, New York. Price \$2.50 net.

Diseases of the Nervous System—By H. CAMPBELL THOMSON, M. D. (London), F. R. C. P. With 8 colored and 12 black and white plates and 101 figures in the text. Published by W. T. Keener & Co., 90 Wabash Ave., Chicago. Price \$2.75 net.

An Aid to Materia Medica—By ROBERT H. M. DAWBARN, M. D. Fourth edition, revised and enlarged by Eden V. Delphey, M. D. Published by the MacMillan Co., New York. Price \$1.75 net.

The Development of Ophthalmology in America, 1890 to 1870—By ALVIN A. HUBBELL, M. D., Ph. D. Published by W. T. Keener, Chicago, Ill. Price \$1.75.

The Common Sense of the Milk Question—By JOHN SPARGO. Published by The MacMillan Co., New York, 1908.

Right-handedness and Left-handedness, with Chapters Treating of the Writing Posture, the Rule of the Road, etc.—By GEORGE M. GOULD, M. D. Published by J. B. Lippincott Co., Philadelphia, 1908.

Why Worry?—By GEORGE LINCOLN WALTON, M. D. Published by J. P. Lippincott Co., Philadelphia, 1908.

A Short Practice of Midwifery—By HENRY JELLET, B. A., M. D., (Dublin Univ.), F. R. C. P. I. With a preface by Sir W. J. Smyly, F. R. C. P. Q. Fifth edition revised, Second 10,000. Published by J. & A. Churchill, London; P. Blakiston's Son & Co., Philadelphia.

Heart Disease and Blood Pressure—A Practical Consideration of Theory and Treatment. By LOUIS FAUGERES BISHOP, A. M., M. D., Clinical Prof. of Heart Disease, Fordham University. Second edition. Published by E. B. Treat & Co., New York.

Technological Dictionary—In French, German and English.—By ALEXANDER TOLHAUSEN, Rev. by LOUIS TOLHAUSEN, English-German-French. Fifth edition. 3 Vols. Published by MacMillan Co., New York. Price \$2.75.

A DOG AND A MAN.

He was a dog,
But he stayed at home
And guarded the family night and day.
He was a dog
That didn't roam.
He lay on the porch or chased the stray—
The tramps, the burglar, the hen, away;
For a dog's true heart for that household beat
At morning and evening, in cold and heat.
He was a dog.

He was a man,
And didn't stay
To cherish his wife and his children fair.
He was a man,
And every day
His heart grew callous, its love-beats rare,
He thought of himself at the close of day,
And, cigar in his fingers, hurried away
To the club, the lodge, the store, the show,
But! he had a right to go, you know.
He was a man.

—London S. S. Times.

American Medicine

FRANK CLARK LEWIS, M. D., *Managing Editor.*

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In Advance.

School Hygiene has become within a few years one of the most important branches of public medicine. The thought and study that is being given to the subject augurs well for the future and already the benefits are becoming apparent. Conditions that were not only tolerated but actually recommended in our schools a few years ago, today are recognized as evils and prohibited accordingly. A new era is at hand, one that is going to witness a really remarkable application of practical science in the home, school and factory. The fundamental welfare of the individual is the prime object, since it is at last recognized that the general or public benefits of sanitary and hygienic measures are useful only so far as they are effective when applied to the individual. The modern physician is going to play a very important part in the new order of things. He will have no monopoly, however, of the great questions concerning the public health, for the intelligent layman will find it not only wise but necessary to direct his attention to these vital matters. At the same time, the training and opportunities of the competent physician fit him especially for leadership in all sanitary undertakings, and the time is close at hand when medical specialists in sanitation will be the only ones chosen as the heads of these departments of public health. This is as it should be, for a general medical education and a

broad experience in medical practice are essential in order to properly grasp the intricate human, as well as scientific problems of public medicine.

The most valuable asset of a community, quite as much as of any individual, is health. The foundation of human happiness really rests on this *summum bonum* of human life. In truth, health is the one great birth-right. Too often, however, we exchange it for a mess of pottage or are robbed of it by the ignorance or indiscretion of our fellow men. Yet civilized men have long realized that among the individual rights of which the social fabric is woven, the most important are the preservation of health and an adequate protection against the causative factors of disease. The very essence of communization and government will be found in the enactment of laws pertaining to the health of the people. Indeed, the earliest known codes of law paid no little attention to hygienic matters and the wisdom of the ancients in this direction showed a remarkable grasp of the situation. It only remains, therefore, for modern man, by the application of modern knowledge, to more effectively execute the laws that are really as old as Society itself.

Execution is the thing. Many there are who profess to see in national affairs dangerous encroachment of the executive

branches of the government on the legislative and judicial. This is the most ridiculous of fears. The country needs today more than anything else strong, vigorous execution of existing laws. Thus only can the evils as well as the benefits of any law be demonstrated.

For the proper execution of modern health laws, an effective national system is imperative. The possibilities of executive government by commission have been established by several notable successes, and there is every reason to believe that a National Health Commission efficiently organized would solve our national sanitary problems in the most prompt and satisfactory way. Some such plan, comprehending the establishment of a National Health Bureau or Commission must soon be consummated or this splendid country of ours will be seriously handicapped. A department with representation in the cabinet is not necessary. In fact such a plan offers certain objections, and for the greatest good of the people, the health questions of the country should once and forever be removed from the realm of politics. It is to be regretted that so many delays must be encountered. But the intelligent people are awake to these great national needs and it is only a question of time when some statesman will drive home to Congress the urgency of a National Health Law.

The Democratic Platform contains the following strong plank:

"We advocate the organization of all existing national public health agencies into a national bureau of public health with such power over sanitary conditions connected with factories, mines, tenements, child labor and other such subjects as are properly within the jurisdiction of the federal government and do not interfere with

the power of the State's controlling public health agencies."

It well shows the trend of affairs and is particularly interesting in view of the editorials in *American Medicine* last month on the emasculated health plank of the Republican Platform. *American Medicine* believes in non-partisanship for scientific publications, but cannot forego the opportunity of commending the judgment and common sense of those who framed the above plank as compared with the indifference and ignorance of those who "played politics" with the plank on the same subject in the Republican Platform.

A bill to regulate expert testimony has been prepared by a committee of the New York State Medical Association and will be considered by the Bar Association with a view to its early presentation to the legislature. This matter is of such vital importance that we hope that it will be thoroughly studied by the medical profession, as it concerns every physician in the land, and if it has defects they must be remedied. It is the first step and in the right direction at least, for it is the opinion of the physicians in every part of the world where the subject has been discussed that expert witnesses, whose opinions are needed by the jury to aid in interpreting evidence must be called by the court and not by the prosecution or defense. Experts hired by either side as assistants to the attorneys are necessarily partisans and must be excluded from the witness chair, and it does therefore seem that the section of the bill permitting such practices will not only perpetuate the present scandals, but make them worse, for we will have three kinds of opposing experts instead of two. The system now in use must be ended, not mended.

The selection of experts is limited to lists supplied to the courts by the State Medical Association or Academy of Medicine, and this is far reaching legislation, as it makes these associations official parts of governmental machinery—a position they should have occupied a century ago, as it is disgraceful the way physicians neglect their public duties in their devotion to individuals. To be recognized as fit to give an opinion in a matter affecting public welfare, a man should be a member of his local association, or of the association of some other State, for it may happen that there may be men of special qualifications needed in some case who reside elsewhere than in the State—men who have made investigations which no one else has attempted. The bill does not recognize such a contingency and in that respect is defective. No State in the Union is so self-sufficient in personnel or property as to be independent of all others. This is a big nation—not a confederation of 46 little ones—and courts frequently must send out to other States for witnesses of every kind.

Officialism may run wild now and then and decline to recognize new men, but that is a danger which would exist in any other scheme and would be corrected by publicity. Perhaps it would be better to amend the bill so as to make available as additional witnesses any physicians satisfactory to both prosecution and defense, no matter whether they have just graduated or are lay investigators like Pasteur. Surely he would have been competent in a case involving the question of rabies. The bill seems more in the nature of special legislation to correct abuses of testimony of alienists, but there are equal difficulties when toxicologists, pathologists and surgeons are called to the stand for opinions.

General legislation as to all experts, medical and non-medical, could possibly be enacted, for they are all tarred with the same stick. Engineering and handwriting experts give just as contradictory testimony as medical ones, only they are not so much in the lime-light. It is the system which is at fault, and perhaps if the system were changed there may be no need of special medical legislation. The whole matter must be kept under discussion from now on, for it is urgent and must be remedied by radical changes, but radical changes are dangerous unless discussed thoroughly beforehand to prevent freak legislation.

The exclusion of witnesses having less than seven years of practice is evidently intended to obtain alienists who have given prolonged study to this complicated specialty, but if it applies to all other lines it might interfere with the course of justice, for the history of medicine shows that young graduates or even medical students not infrequently make discoveries which would be of extreme value to courts. Placing the matter in the hands of medical associations certainly has the supreme advantage of consolidating the medical profession by making it to one's personal advantage to be part of an organization and not a free lance. We never could accomplish any civic duties when we were all free lances, often fighting each other, instead of being shoulder to shoulder fighting for the common good of mankind. But it is not wise to carry our organization too far. The value of an expert's opinion depends on the expert. Juries are not required to accept such opinions—indeed, as a rule they cannot, because opposing opinions are apt to be given, no matter how we guard the witness chair. It seems that the exclusion

of certain youthful experts is an attempt to secure an impossible unanimity, and might as well be abandoned.

The anti-vivisection movement has at last been explained. The Society for the Prevention of Abuse in Animal Experimentation certified to the New York Secretary of State, that the expenses of promoting their bills before the legislature amounted to \$4,481, and that Antoinette E. Gazzam—most appropriately named—paid the freight. It is truly remarkable that a woman with more money than sense can make so much noise as to give the impression that there is a popular demand for regulation. The vast majority of people know nothing of the matter and the few who take interest in it are overwhelmingly in favor of placing no restrictions on work which is saving so many thousands of lives. The inhuman pestiferous agitators must be suppressed in the interests of humanity. People who think more of their dogs than their babies should really be in asylums, but what can be said of lawyers who will draw up bills which would be impossible of execution if enacted into law? Now let the real women—those who love their babies—form a Society for the Suppression of "The Society for the Prevention of Abuse in Animal Experimentation."

Unsanitary telephone booths have received much attention in Europe, but practically none here, yet our arrangements are filthy and dangerous to a degree. The odors in some of them are positively nauseating, and they are so close, hot and unventilated that the user comes out drenched in perspiration. Then the door is tightly

closed so as to keep in all these human emanations to poison the next customer. No wonder such diseases as influenza run like wildfire through the employees of certain establishments. Our Public Utilities Commission should take up the matter at once and compel the telephone companies to install booths of larger size, at least six feet square and ten feet to the ceiling, with ample means of ventilation. In the meantime, the doors of the present sweat-boxes should be always wide open when the telephone is not being used. There is no doubt whatever that many people contract diseases when using public telephones, and it is really a nuisance for the health authorities to abate, if the Public Utilities Commission and the telephone companies longer neglect their duty.

The dangers of telephones are also receiving attention abroad. Certain experiments have recently shown that living tubercle bacilli are harbored in the transmitter and that there is urgent need of cleansing and disinfecting after each customer. In some places in Europe the apparatus is disinfected once a day, but that is not sufficient. The odors from some of the public phones are positively putrid, and no doubt come from the decay of sputum. The receivers are also dangerous, for they are being used by persons with purulent discharges from the ear, which are promptly deposited on the ear of the next customer. After each use the receiver should be wiped off with a cloth soaked in some efficient disinfectant. We do hope that the whole disgusting system now in operation will be promptly remedied, and no better means can be taken than to stir up a public opinion which will compel action.

The anti-mosquito movement has now ceased to be an experimental "crusade" of enthusiasts, but has proved itself to be a necessity of civilization. It is only ten years since it was really proved that these insects transmit diseases, and yet the progress in prevention of the last decade has been simply phenomenal, and progress too which has been made against the ridicule and opposition of the ignorant. Even those laymen who look upon mosquitoes as mere nuisances have discovered that life is more worth living in places where the pests made life scarcely worth while. So there is an increasing support being given to all those who are engaged in this work. As soon as mankind learns that a certain animal is an enemy, that animal is doomed to extinction—at least where it is practicable. It is therefore of the greatest importance that the lay press should educate the public to the necessity for a very extensive drainage system which will destroy the breeding places. Land formerly considered hopeless wastes are now found to be habitable, and a few thousand dollars has added millions to the value of real estate, so the economic side may be enlarged upon, if the question of life and health does not appeal to the owners.

The responsibility of owners of mosquito breeding places has already been accepted, and the next step is to punish those who are maintaining "nuisances." The time has long gone by when a man could consider his house his castle in which he can do as he pleases, whether or not he kills his neighbors. It is a matter of common sense as well as common law, that we must not be compelled to protect ourselves against remediable dangers in a neighbor's house, except in the one case of smallpox, in which

it is acknowledged in some quarters that the danger is really non-existent if we will only resort to timely vaccination. But if a householder maintains water barrels and other mosquito breeding places from which the insects fly out to bother neighbors who cannot protect themselves, he is a public enemy to be locked up or compelled to act with decency and humanity. He is more dangerous than the man who stores dynamite in his cellar. At the present moment there are some rich men who refuse to have mosquito prevention carried out on their suburban estates, and their wealth should not protect them from punishment. In like manner owners of marsh lands, who have refused to drain where practicable, are beginning to learn that the State is liable to do the work and charge the costs to the land, even if it amounts to confiscation. For this grand beginning the nation must thank Prof. Jno. B. Smith, State Entomologist of New Jersey, one of the great pioneers in the practical work of mosquito extermination, whose labors are already showing such splendid results that New Jersey will soon cease to be a by-word.

An anti-malaria crusade is now needed. Perhaps it is time, in mosquito countries, to inaugurate a house to house inspection with a view to discovering breeding places and educating the tenants as to methods of prevention. Of course this is already being done wherever yellow fever is liable to be introduced, but it should be extended to every other locality. There is only one reason why malaria does not disappear, and that is public apathy as to mosquito extermination, an apathy in part due to the failure of physicians to keep harping upon the subject in and out of season. Now that the summer's experiences are fresh, is the

time to begin renewed agitation of the matter to the end that 1909 will see most extensive operations. Let the public know that every case of malaria is due to some one's criminal neglect of duty. The time is not so far off when such a patient will be able to sue the State and recover damages heavy enough to cover losses due to his illness. The congestion of population has placed us in the keeping of society to a degree which few realize, but all will realize it if taxes are to be spent in paying damages and the sooner such suits are begun the better. In this way, too, there will soon be a public opinion demanding the organization of a strong national health authority. It is dreadful that millions are spent to preserve the health of the farmer's hogs, but not one penny to save his babies.

The unkindness of professional men in their relations with each other is proverbial. Why is this so, and particularly as regards medical men? Surely no men have deeper founts of sympathy or friendliness than doctors generally, and few have more kindly or generous dispositions. Some one has said, scratch a doctor and you are pretty sure to find a good fellow. But when it comes to analyzing his attitude towards his professional brethren—the less said the better. Perhaps, after all, it is only competition in professional garb, but to many a man it is hateful, none the less. Many a young physician suffers acutely and has his whole life embittered by the unkindness and hidden meanness of the co-laborers from whom he expected fair, square and generous association. If he is ambitious and tries to get ahead, the more venom meted out to him by his "colleagues." If he is successful, the more assiduously his professional brethren wield the hammer. Most of it is "absent treatment," and while rare-

ly detrimental in the sense of affecting his material fortunes, it does destroy the charm of his vocation and hurts him as a man. It is not right. Every doctor knows the difficulties and hardships of medical practice. If ever man's inhumanity to man is exemplified it is to the doctor. Too often his only fee and reward is ingratitude. All this the physician knows, and it ought to bring him closer to his co-worker and make the vaunted fraternal spirit less the hollow sham it is. Maybe it will some day, but sometimes it seems a long way off.

Flushing the streets with water from the fire hydrants is practiced in some cities with great advantage, not only in securing cleaner appearing thoroughfares, but also in washing away into the sewers infective material that otherwise would dry and become dust. Now that New York City has successfully installed a system whereby the surrounding salt water is constantly available in unlimited quantity throughout a considerable district, it would seem desirable to nightly wash the streets. The section supplied by the new system is the most congested in the city and probably the most difficult in which to enforce sanitary ordinances. Consequently flushing the streets once a day, preferably at night, by insuring greater cleanliness will protect the dwellers of this district from their own filth, and at the same time greatly reduce their menace to the whole city. The matter is worthy of careful consideration and we hope the New York City Health Department, incidentally the efficiency of which under Dr. Darlington is most gratifying, will be able to arrange for this service at an early date. Thus again do we see the possibilities of active cooperation between different departments of city government, a cooperation that well exemplifies the utilitarian opportunities of modern equipment.

ORIGINAL ARTICLES.

HEALTH DEPARTMENT METHODS FOR THE SUPERVISION OF THE MILK SUPPLY.*

BY

WM. CREIGHTON WOODWARD, M. D., LL. M.,
Health Officer of the District of Columbia.
Washington, D. C.

Supervision of the milk supply is essential to the protection of public health and to fair play in trade. Sanitary control is closely bound up with commercial standardization, and for this reason, and because of the overwhelming importance of maintaining the wholesomeness of the milk supply, the entire duty of safeguarding the milk of the community is commonly entrusted to the Health Department.

The initial step toward a good milk supply is the fixing of standards. The sale of milk the wholesomeness of which is fairly open to question must be forbidden. After that, due provision must be made with respect to the grading of such as is saleable. An agreement must be reached as to what constitutes "milk" and what constitutes "cream," and then any wholesome lacteal fluid may be permitted to be sold under any apt designation that may be agreed upon—skimmed milk, buttermilk, pasteurized milk, sterilized milk, and so on. Standards must be fixed, however, not only for milk, and for its variations, modifications, and derivatives, but also with respect to the means to be provided for producing and marketing them. Facilities for producing and marketing a wholesome article without an undue amount of care and labor must exist, since otherwise it is not likely that a wholesome article will be produced or mar-

keted. Nevertheless, since by good management an article of excellent quality may be produced even under adverse circumstances, and since by bad management the worst kind of milk can be produced even amidst the best of surroundings, too much stress must not be laid upon details of dairy farm and dairy construction; character of management and quality of results must be given due weight.

The control of the milk supply requires a laboratory force and a field or inspection force. Supervision must be provided to co-ordinate the work of these two forces with each other, with the contagious disease service, with the work of the police or magistrate's court, with the needs of the milk producer and dealer, and with the needs of the public. The inspection force naturally divides into two branches—one to look after places where milk is produced, the dairy farms, the other to look after places where it is prepared or held for sale or sold, creameries, dairies or milk shops, lunch rooms, and so on.

Inspectors must see that the places that they visit are in conformity with law and regulations. To that end they must advise and co-operate with the proprietors, and when necessary, but only when necessary, exercise their own authority, or, if need be, call to their aid the authority of the Health Department and of the court.

Under existing conditions a properly trained veterinary surgeon probably makes the best available inspector of dairy farms. He is familiar with the principles of dairy hygiene and with the diseases of cattle. What he does not know about the sanitary and commercial relations of milk, he can readily acquire. It may be that some day agricultural colleges will graduate men even better adapted to this work than are veter-

*Read at a meeting held under the auspices of the New York Milk Committee, New York City, April 18th, 1908.

inary surgeons, but thus far they either have not done so or else have not done so to a degree sufficient to make their graduates generally available. Graduates of dairy schools or graduates of medical colleges make the best inspectors of creameries, dairies, and other like places, where the questions involved relate to the sanitary handling of the product and not to the health of cattle. There is great difficulty now in satisfactorily filling places of either kind, not only because of the dearth of technical knowledge among applicants, but also because of the scarcity of men of common sense, discretion, and good address, who desire such appointments. Doubtless when the salaries paid such employees are proportionate to the character and importance of the work required of them, available applicants will not be lacking. The inspection force must be so ordered that it will collect and submit all samples of milk and of the water used on the dairy farm and at the creamery, that may be required for analysis in the laboratory. The inspector, however, may in the field examine by sight and smell, and possibly by taste, the milk as it is actually held and offered for sale, and should in any event at frequent intervals take its temperature if he has any reason to feel that it is not kept properly cool.

The immediate object of milk inspection is to obtain results in the milk offered for sale and sold. Light, ventilation, and drainage in the barn, tuberculin testing of cattle, and so on, are mere means to this end. Whether the desired result is being accomplished may be best determined by chemical and bacteriological analyses. Such analyses will show whether preservatives or coloring matters are being used; whether dirty, skimmed, or watered

milk is being sold for the standard article; and whether milk that has been improperly cared for, or that, if properly cared for, is too old, is being sold as fresh sweet milk. Moreover, these analyses, and especially the bacteriological analyses, will serve to guide the movements of the inspection force, permitting its more efficient and economical management. Every place where milk is produced or handled for sale must be inspected from time to time, but some need inspection oftener than others, and the best way of determining which need inspection most frequently and when they need it is by bacteriological analyses of their product. If a series of observations shows that the milk from a given dairy farm, creamery, or dairy contains more bacteria than during the same period of time does the milk from other farms similarly situated, that is the dairy farm, the creamery, or the dairy that must be most closely watched. If the area to be covered by the inspection service is so great as to render difficult the transportation of samples for bacteriological analysis at headquarters, district laboratories may be established or field laboratories devised for such work. In like manner the records of the contagious disease service must be utilized for the control of the milk supply. Every case of scarlet fever, of typhoid fever, and of diphtheria must be charged tentatively to the milk man, and if at any time the number of cases charged within a given period against any one dealer seems to be out of proportion to the extent of his business a special investigation must be made to ascertain whether his milk is responsible for the spread of the disease.

The milk inspection service must be under a responsible head, to whom appeal can be taken by any producer or dealer

who feels himself aggrieved and with whom any citizen can lodge complaint. He must see that the inspection and laboratory forces do their work; that the records of the service are properly kept, which means that the record of each establishment is readily accessible at all times; that the producer and dealer are promptly and accurately informed of any criticisms of their establishments or methods, and of any desired or desirable improvements, and that recalcitrant ones are dealt with according to their just deserts. He must see, too, that campaigns of publicity are carried on at opportune times for the education of the public, including prosecuting officers and police magistrates, with respect to the sanitary relations of the milk supply.

In order to permit the proper supervision of the milk supply, it is necessary that the location of every place where milk is produced or sold be known. This is best accomplished by the permit system. The supervising authorities can keep in touch with the producer and dealer by means of score cards made out in duplicate, one copy of which must be furnished the producer or dealer to whose establishment it relates, but a discreet supervising officer will wisely supplement these score cards by personal letters in appropriate cases. The office copies of the score cards serve also the useful purpose of enabling any interested citizen to ascertain by visiting the Health Department just how careful his milk man is and the quality of the milk that he supplies. Whether it is or is not desirable to inform each producer and dealer of the results of chemical and bacteriological analyses of his product is debatable. The producer or dealer may utilize such reports for the purpose of misleading his customers by displaying the good reports and concealing

those that are bad. If such reports are to be furnished, they should be consecutively numbered, so as to enable a customer or a prospective customer to detect any such fraud.

For a small community, the public may possibly be kept sufficiently informed as to the condition of the several farms and dairies from which its milk supply is derived by the posting of bulletins in the city hall or the post-office, or by the publishing of the records of each establishment in the annual report of the board of health. For larger communities, these methods are not practically useful. Possibly the establishment in public libraries and other similar places, of records of dairies and of dairy farms, to be kept on the card index system and to be accessible to the public, might be of service. The publication in the daily papers of the names and addresses of persons convicted by the court of having violated the law and of persons whose permits have been suspended or revoked may be of value.

It is not uncommon to enforce milk laws by the suspension or revocation of permits without the intervention of the court. This is justifiable when necessary to prevent the spread of a communicable disease, just as enforced quarantine of citizens is justifiable under similar circumstances. It is justifiable, too, because of necessity, with respect to those places that are located in jurisdictions beyond the reach of the ordinary process of the courts of the community to whom the milk is supplied. But with respect to local establishments, such arbitrary procedure, however desirable it may be, is objectionable in principle. The old-fashioned distinction between the legislative, executive, and judicial branches of the government should be respected and the ac-

cused be given a trial in court rather than punished by an administrative officer. The fact that courts do not always appear to be in sympathy with efforts to protect the public health, even with respect to a matter so palpably and intimately pertaining to it as does the milk supply, is a questionable justification for a departure from our established principles of government, although it may justify improvement in legal procedure and possibly in the character of our own work or that of our courts. For reasons similar to those stated above, the spilling of milk into the gutter seems to me to be in most cases of doubtful propriety. If milk is unwholesome, or if it is being offered for sale under any supposed fraudulent pretense as to its character, then it may be denatured by some innocuous coloring or odoriferous matter without depriving the owner or custodian of the milk of his opportunity of making or having made such independent examinations and analyses as may be necessary for a fair defense, and does not leave him at the mercy of a single inspector.

With respect to the supervision of farms and creameries supplying milk to two or more communities, some arrangement for co-operative inspection must sooner or later be effected. The efficient federal supervision even of the interstate milk supply alone is so great an undertaking that there is but little likelihood that such a force of federal employees will be provided in the near future as will relieve our cities from the necessity of carrying on inspection work outside of their own ordinary jurisdictions. Nor in fact would federal supervision do away with the necessity for local inspection, since the authority of the federal government is limited to the original package and since so large a part of the milk of

any community will not come from across the State line. The State can do something, since its sphere of action is not limited by the original package decision, but the farmer vote must be seriously reckoned with if the enactment of State laws and the making of State appropriations for State inspections are to be considered. Two or more communities, however, drawing their milk supply from the same territory might well divide the salary and expenses of the inspectors between them or each limit its operations to certain specified dairy farms and arrange for the exchange of inspection reports, so that each farm would be inspected, but only by a single inspector.

For the benefit of the small dealer and producer, the community should provide laboratory facilities for the analysis at actual cost of samples submitted by them. Larger producers and dealers have, or should have, facilities of their own for doing such work. If the milk inspection service undertakes to make such analyses free, it may readily be called upon for such a number of analyses as will seriously interfere with other work. If, however, the producer or dealer pays the cost of the analysis and the fees derived go to the maintenance of the laboratory, the money collected will be in proportion to the amount of work done, and the fact that the producer or dealer is willing to pay the required fee will be best evidence of his good faith in asking service.

It must not be regarded as a hardship, however, even under existing conditions, to hold the dealer responsible for the character of the milk that he sells. If he finds analyses requisite for his protection, it is necessary only for him to make such analyses, or, if he can not, then to pay for having them made. The cost of making such analyses, whether in time or money, may be

added to the price of the milk or else can be deducted from his profit. Moreover, the dealer can by his contract with the producer or wholesaler protect himself against any loss that he may suffer through the delivery to him of milk that he himself can not lawfully sell, and thus throw the burden back on the producer or wholesaler if the vendor is convicted of unlawfully selling such milk. And possibly if the producer or wholesaler unlawfully sells him milk, and as a consequence he suffers damage, he has a right of action against the vendor even in the absence of an express contract.

So also with respect to the responsibility for the acts of employees. The producer and dealer must protect themselves by employing the right kind of employees, by supervising them properly, and then by making it worth the while of the employee to do his work right. Seldom does an employee violate the law except when he is compelled to do so by force of circumstances over which the employer but not the employee has control, or when he believes from his knowledge of his employer and by the general atmosphere of the establishment that his infraction of the law will be condoned, and may be even applauded by the proprietor.

SURGICAL HINTS.

In cases of extensive ruptures of muscles the best functional results are obtained by direct suture of the severed ends.

Too frequent irrigation of the ear in cases of chronic otitis may stimulate the formation of granulation tissue and in that way keep up the discharge.

Do not neglect to examine the urine in cases of erysipelas, especially the severe forms, as nephritis is quite a common complication.

THE AUTO-INTOXICATIONS.

BY

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In the present state of our knowledge it is not desirable to attempt any final classification of the various intoxications. This is particularly so in regard to the auto-intoxications, those toxic conditions resulting from the formation of poisonous substances within the body. In a strict sense we should include under this latter term the intoxications of infectious diseases, but since beyond question the infective agents are foreign to the body, the intoxications which they produce may likewise be regarded as arising from external influences. Let us then restrict our attention to the toxæmias that result from the formation of toxic substances within the body in other than specific infections.

We may with advantage distinguish

- (a) Toxaemias resulting from the presence of an excess of physiological products.
- (b) Toxaemias resulting from products whose formation, though possibly tolerated in health, is not strictly physiological, products that we shall term pathological.

It will be seen that in this classification we do not include systemic conditions dependent merely on the absence of a sufficient quantity of physiological products, as myxedema and cretinism. These conditions are not definitely known to be auto-intoxications, though they have been classed as such in the literature. An intoxication presupposes the presence in the body of an active intoxicant.

Many substances that in relatively small amounts are tolerated by the body without the production of any harm will in rela-

tively large quantities produce such a perversion or inhibition of normal metabolism as to constitute an injury. Accordingly, in these new quantitative relations, such substances pass from the class of innocuous to distinctly harmful or toxic substances. This may be true of nearly everything that is ordinarily regarded as harmless. Salt, sugar, water, the very things that the body looks to for its maintenance and support, may in excessive amounts become harmful. It is therefore safe to predicate that physiological products in sufficient amounts are toxic and to inquire whether such toxic quantities are met with as the etiological factors in any diseased conditions.

It is convenient to consider the actions of such physiological products under the divisions of waste products and products adapted to serve some purpose in the economy. We may deal with the waste products according to the channels through which they escape from the body. The excretory products of the skin need not receive our attention since it now seems established that the interruption of the cutaneous function leads to disastrous results through the lowering of body temperature.

It is difficult to decide the exact extent of auto-intoxication by the waste products excreted through the lungs, since their retention in the body is accompanied by a deficient oxygen supply. However, the auto-toxic factor is probably quite as responsible as the oxygen deficiency, though the convulsions of asphyxia are entirely referable to the latter. Nor need we search beyond the carbon dioxide and the ammonium salts which it retains in the blood as ammonium carbonate to find the particular waste products responsible for the self-poisoning.

It need not be questioned that these are the chief toxic factors.

The chemical substance responsible for the auto-intoxication resulting from renal insufficiency is not so definitely determined. The name uraemia presupposes that the toxic element is urea. Experimental studies of the question have been largely directed to the determination of the toxicity of the urinary constituents and it has been established that ordinarily the inorganic salts, particularly the salts of potassium and ammonium, give to the urine more than three-quarters of its toxicity. As we well know, however, the determination of the toxic constituents of the urine has failed to supply us with an adequate explanation of the factors operative in uraemia. It now seems that in addition to the combined toxic actions of the urinary constituents we must look to disturbances in the physical conditions of the protoplasm of the body cells for a part of our explanation of the uraemic state, conditions that arise from osmotic changes due to variations in the molecular concentration of the blood, as a result of the renal insufficiency. As this feature of the pathological state is not, however, strictly an intoxication, its consideration need not concern us here.

It is maintained by some writers that excessive amounts of certain urinary constituents produce auto-intoxication, even when there is no renal insufficiency. This position is held particularly in regard to uric acid. Let us consider then, the evidence as to whether there exists a uric acid auto-intoxication. The view has received its strongest support in the fact that the uric acid output is distinctly increased in many of the clinical conditions where there seems to be an auto-toxic element. This consti-

tutes the basis and practically the only ground for attributing a toxic action to uric acid. In the attempt to determine the matter by experimental observations no support is given to the view. There is no established experimental proof that uric acid is toxic. Moreover, the presence normally of such relatively large quantities of uric acid as occur in birds and scaly amphibians suggests that uric acid is not toxic, at least to the cells of these animals, in very much larger amounts than are ever present in man. At a previous time, I suggested that the uric acid increase was due to synthetic uric acid formation from organic acids produced many times in gastro-intestinal fermentation and putrefaction. It now seems probable that these alimentary processes referred to produce this result in another way. Recent studies of nuclein metabolism indicate that the series of changes that begin with nuclein break down and end with uric acid destruction in the body, are due to the activities of a considerable number of tissue enzymes or ferments. The uricolytic or destructive enzyme of uric acid exists chiefly in the liver, kidneys, and muscles.

In the toxæmias of gastro-intestinal origin we know that there is produced retardation, especially of hepatic function. It is to be expected, therefore, that the uric acid destruction normally accomplished by the liver through its uricolytic enzyme will likewise be retarded and that as a consequence some uric acid will escape destruction and go to increase the amount eliminated. It is now believed that this is what actually does occur. It is thus seen that in these conditions the toxæmia of gastro-intestinal origin is the real auto-toxic factor and that the uric acid increase is a consequence of this and that it does not itself necessarily

constitute a toxic element. The diminution of uric acid destruction and the consequent increase in uric acid elimination may be brought about when the uricolytic ferment is retarded in other ways. Thus, it is now believed that certain drugs, notably alcohol, leads to an increased uric acid output by exercising such a retarding influence. Here the alcohol is the real toxic factor, if there be any.

Regarding the purin bases, experimental study of their toxicity seems to show that they are rather more capable of producing general toxic symptoms when injected into small animals than uric acid: On the other hand, there is no reason at present for believing that they do not give rise to systemic intoxication in any diseased conditions. The view that they are increased in gout, put forward by several observers using inaccurate methods of analysis, has not been confirmed by the results of more accurate studies. While, then, we are not justified in concluding that future observations may not show that the purin bases do bear some etiological relation to certain toxic conditions, it must be admitted that at the present we are ignorant of any such relation.

What has been said as to the toxicity of the purin bodies applies also to the hexon bases and other leucomaines. These products are charged by certain writers with grave responsibilities because of the supposed toxic actions. We do not know at the present time that their toxicity is ever the cause of any definite disease; if indeed it is, it remains for the future to establish the fact. For the present we are not justified in believing that the toxic action of these substances determines any diseased condition.

We cannot dismiss the subject of auto-intoxications by physiological products

without reference to the condition of exophthalmic goitre. The toxic element in this condition has been attributed to the over-production of the iodine products of the hyperaemic thyroid. The suggestion is an interesting one and carries with it a certain amount of probability, but we are perhaps not yet justified in regarding it as unequivocally established.

Evidence has been obtained which seems to indicate that sunstroke is accompanied by the development of an auto-intoxication. What the toxic products are, whether physiological or pathological, is not known. In the few experimental observations that have been made, the blood seems to acquire a very marked toxicity with the onset of the condition.

Of the auto-intoxications due to pathological products I shall refer to the products of degeneration of the nervous system, to acid-intoxication, the toxaemia of pregnancy and gastro-intestinal intoxication.

The nervous system participates in many systemic intoxications. We are apt to look to the degenerative changes of the parenchymatous viscera for our evidence of damage from toxic action, but it seems that the effect on the central nervous system is frequently no less real, the changes being of the same character and for the same reason as hepatic or renal parenchymatous degeneration. Besides this participation in the autogenous toxaemias in general, the nervous system may itself originate a toxic condition, as has been shown especially in General Paralysis of the Insane. Here the study of the cerebro-spinal fluid reveals a toxic condition due in part to the existence of nucleo-proteid in the fluid and to a lesser degree to cholin and feebler toxic substances. It has been suggested that the nu-

cleo-proteid is the cause of an increased coagulability of the blood, which may be a determining factor in promoting a venous stasis, this in turn being responsible for the seizures of an epileptoid nature which patients suffering from General Paralysis are apt to experience.

There is a well defined auto-toxic condition known as acid-intoxication. I do not use this term in reference to the mild toxæmia common in the so-called lithæmic state, where there is uric acid excess and oxaluria. The term signifies that profound acidosis, which is the cause of diabetic coma and less frequently of other active manifestations, notably persistent acid vomiting. The chemical pathology of the condition is in part well understood. The acid formed is chiefly Beta-oxybutyric acid. If the amount is small, this is at once transformed into acetone through the formation of the intermediate diacetic acid and the condition is only manifest by a more or less marked acetonuria. As the production of Beta-oxybutyric acid increases, however, a point is reached where the transformation into diacetic acid and then into acetone is delayed and the acid products themselves pass into the blood, the ammonium salts are made use of for neutralization and their transformation into urea prevented. The blood attempts to rid itself of the excess of acid products by means of their excretion by the gastric mucosa and kidneys, this removal by the former channel giving rise to the persistent and found emesis of this state and the latter to those characteristic urinary changes by which we recognize the condition, namely, the presence of a large amount of acetone, of diacetic acid and of more or less Beta-oxylatyric acid in the urine, together with a marked increase of the urinary ammonium.

The cause for this marked production of organic acids is not known with certainty, but has been attributed to the abnormal destruction of proteids and more recently the oxidation of depot fat of the body in heat and energy production, either because the body is incapable of utilizing carbohydrates for these purposes or because it is prevented from doing so by failure to ingest them, that is by carbohydrate starvation. At any event, when the acid production reaches an active point it constitutes a profound toxic condition calling for heroic treatment. One should not neglect to consider the possibility of its presence, not only in the graver manifestations of diabetes mellitus, but also in any case of persistent acid vomiting, either of childhood or in adults, and in pregnancy.

Closely allied in some respects to acid-intoxication is the toxæmia of pregnancy. There may be the same urinary manifestations described as indicating acid-intoxication, but in many cases there also appear to be profound organic changes in the liver and kidneys. Here, the urine shows not only the findings of an acid-intoxication already enumerated, but also a marked relative increase of the amino-nitrogen, indicating hepatic autolytic changes. In these cases the liver at autopsy shows degenerative changes even as marked as in acute yellow atrophy. The fundamental etiological factor producing such a profound disturbance is at present merely a matter of conjecture. The suggestion that it may be a pathological enzyme produced in the placenta is supported by some of the facts, in which event the hepatic autolysis may be viewed as a conservative process for the removal of the injured and now useless portions of the hepatic structure.

We have yet to consider the toxæmias of gastro-intestinal origin. Their existence is very generally realized, being the reason of the courageous purging of olden times, as it is now of less extreme treatment in the same direction. Aside from the clinical manifestations, the evidences of toxæmias of this origin are revealed by the blood, the urine, the stomach contents and the stools. Before entering into their consideration let me remind you of the conditions which exist in the tract itself. First, there is the secretion and action of the various digestive agents; second, there is the supplemental action of certain bacterial organisms, the normal bacterial flora; and, finally, there is the absorption of the products of these activities, their passage in part to the liver and the activity of this organ as a result of which objectionable products are detained and oxidized while the harmless and useful substances pass into the systemic circulation.

In the gastro-intestinal toxæmias there is usually a perversion of all of these activities. Secretion is faulty, either because of irritation by illy adapted food, or from faulty innervation by an exhausted nervous system; the faulty secretion in turn occasions delayed digestion; this new order of things supplies new conditions governing the kind and degree of bacterial activities, with a consequent increase of objectionable bacterial products; and, finally, the toxic products thus formed, being either new in kind or increased in amount, enter the channels of absorption. While at first they may be prevented from entering the general circulation by the hepatic vigilance, finally they overcome this barrier and gain access to the system at large. Regarding the auto-toxic element in this chain of events, we have to

consider first the bacteria that occasion the formation of the toxic substances and finally the products absorbed whose presence in the blood constitutes the toxæmias under consideration.

Our knowledge of the normal bacterial flora of the gastro-intestinal tract is at the best fragmentary, while what we know of the bacterial flora in the diseased conditions under discussion is even more incomplete. The part played by the stomach is due to the variation of its secretive and motor activity rather than the bacteria that may either normally or in disease inhabit this organ. All of the many influences that tend to produce hyper or hypo acidity or secretion or to cause diminution of the motor function combine to establish a new environment in the intestinal tract and so are important factors in the struggle for supremacy that is constantly going on between the normal bacterial inhabitants on the one hand and undesirable bacteria on the other. As an example, recent work seems to indicate that the bacillus coli communis and the bacillus lactis aerogenes are not harmful inhabitants of the intestine but that they exercise a protective function. This seems probable because in putrefying media their presence is a hindrance to the growth of the putrefactive bacteria and hence tend to check the activities of these latter. On the other hand the bacteria that in some instances at least are responsible for putrefaction in the intestinal tract seem to include the bacillus enteritidis sporogenes, regarded by many as identical with the bacillus aerogenes capsulatus. It has recently been shown that in some severe and advanced anaemias this latter organism very largely replaces the normal colon bacillus of the intestinal flora, as indicated by the bacteria of the faeces, thus instituting a new

order of decomposition of the intestinal contents and giving rise, as we believe, to quantitative and perhaps even qualitative changes of the bacterial products formed for absorption. This is a single illustration where bacteria inimical to the host have been victorious in the struggle for supremacy in the intestinal contents. That the victor may be some other organism than has been mentioned we need not question since already the study of the bacteria of the faeces in some cases of disease has shown the presence in large numbers of staphylococci, of the intestinal streptococcus, of the bacillus mucosus capsulatus and, especially of bacteria giving the granulose reaction which may tentatively be designated as the bacillus butyricus.

Notwithstanding, the discovery that the colon bacillus has a strong inhibiting action on the growth of putrefactive organisms and hence that its supremacy in the struggle in the intestine is probably a protective one, I do not believe that we are warranted in concluding that the colon bacillus may not itself be injurious by overabundance in the intestinal tract, since there are other than putrefactive processes in which it may be active. I refer particularly to gastro-intestinal fermentation. It has been maintained that while in neutral and alkaline reacting media the activity of the colon bacillus is directed largely to decomposition of the proteid constituents, that when the reaction becomes sufficiently acid, this activity is chiefly directed to the fermentation of carbohydrates with the production of organic acids. Whether this be so or not in regard to the colon bacillus, it is true that in conditions of gastric hyperacidity there is apt to be an increase of intestinal fermentation with the formation of organic acids, a process which we at present attribute to the

influence of the excessively acid contents upon the colon bacillus.

In considering the products of bacterial activity whose entrance into the systemic circulation constitutes the actual gastro-intestinal toxæmia, I shall confine myself chiefly to those products whose recognition aids us clinically in determining the existence of the condition in question. As you well know, a number of these products are removed from the body by excretion in the urine. Of these, probably the best known, because the easiest recognized, is indol which appears in the urine slightly changed as indican. Not long ago in speaking of this subject, I would have emphasized the great value of the test for indican as an aid in recognizing the existence of an intestinal toxæmia. Today, however, the test is so generally made use of that I am inclined to emphasize the limitations of its usefulness. It is only one product of intestinal putrefaction. While its presence in the urine in large quantity demonstrates clearly the absorption of excessive amounts of products of putrefaction, its absence is not to be relied upon as an indication of the reverse condition. There may be a marked gastro-intestinal toxæmia without excessive indol absorption. Of the other urinary products to be considered, in order that such a condition may not escape us, the one nearest related to indican is skatoxyl, the probable cause of the color reaction of Ehrlich with p-dimethylamido-benzaldehyde, commonly known as Ehrlich's aldehyde reaction. Other urinary products are the phenols, the aromatic oxyacids and finally, the relative amount of sulphate in ethereal combination with these products.

In this connection the condition of oxaluria should also be considered. The presence of excessive amounts of oxalate of cal-

cium in the urine may be revealed by its appearance as crystals in large number or by an increased amount in solution. In whichever way it manifests itself, its significance is the same. Excepting in those instances where the oxalates are ingested as such in the food, they are believed to result from gastro-intestinal fermentation; hence, their presence indicates a toxæmia of this origin. The existence of an oxaluria in many neurotic manifestations early led clinicians to associate the occurrence with these conditions. We now know how frequently the gastro-intestinal toxæmias and particularly those that accompany the condition of gastric hyperchlorhydria, have an etiological relation to nervous diseases, so that the existence of an oxaluria in this connection is adequately explained.

It is tempting to speculate as to how the formation of oxalic acid establishes a toxic condition. We do not know whether this condition is the result of the action of oxalic acid itself or whether this is merely one of a number of products formed, others of which exercise the toxic effect. We know that oxalic acid, when absorbed in quantity is capable of giving rise to nervous phenomena that are to some extent exaggerated manifestations of the conditions existing in nervous disease. In the latter disorders just how far if at all the oxalate derived from gastro-intestinal fermentation is directly responsible for the neurotic state, we do not know. We may further question whether the oxalic acid is not absorbed as a sodium salt and, circulating through the tissues, does not there remove the calcium ions from the sphere of their physiological action and thus produce its effect by creating a temporary calcium paucity. The possibility of this is suggested by the muscular state in many of these nervous disorders accom-

panied by oxaluria. However, the character of the toxic action in gastro-intestinal fermentation is as yet quite unknown to us, so that we are not justified in arriving at even a tentative conclusion, in the matter.

The clinical states in which the gastro-intestinal toxæmias exist are so many and so varied that we cannot attempt to consider them at this time. It is safe to remember, however, that whether we have to deal with headache or lumbago, with a cutaneous affection or an epileptic seizure, with neurasthenia or intestinal colic that the presence of a gastro-intestinal toxæmia may play a part and is to be given due consideration. It is by far the most common of the autogenous toxæmias and its clinical manifestations are the most varied.

26 E. 29th St.

HYPERTONIA VASORUM CEREBRI.*

BY

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The caption I have selected for this paper means, essentially, hypertension of the vessels of the brain. The subject is broad and may admit of a great deal of discussion. It may be abbreviated to include all that is vital and at all important to the general practitioner.

It is not my purpose to dwell upon blood-pressure in normal man. This subject has been carefully and thoroughly studied by Drs. Janeway, Krehl, Crile, Cushing, Marey, Howell, and other eminent investigators. I wish to deal with pathological conditions ascribed to hypertension of the cerebral vessels: etiology, pathology, symptoms, diagnosis, prognosis, and treatment.

The etiological factors bearing exclusively upon hypertension may be classified, according to Janeway, as functional, relatively referred to as (a) physiological; pharmacological; toxic; and (b) acute cerebral compression and anemia. I would suggest the addition of the psychological factor to the above classification, because of its meaning and importance in hypertonia.

The factors in essential hypertension are, (a) arterio-sclerosis, (b) renal disease, (c) angio-sclerosis.

Any transitory cause producing on the vascular system increased blood-pressure may be spoken of as functional hypertension. The increase of tension due to excessive mental activity or physical exertion, as found in forcible inspiration in normal man, are physiological acts which force a large amount of blood to the heart and brain. Acute gastric and intestinal pain may cause hypertension (Curschmann). Nicotine, alcohol, ergot, adrenalin, hydrastine hydrochlorate, and styp-ticin are some of the drugs which cause great increase in blood-pressure. Nicotine is one of the most destructive agencies to constructive metabolism, and should be ranked with alcohol. Toxic factors are found in eclampsia (H. Vaquez), gout, alimentary intoxication (Finkelstein), and uremia. Psychical hypertension of great intensity is seen in fright, sudden joy, and great sorrow.

Extreme high tension may accompany acute compression of the brain in fracture of the base of the skull, and in apoplexy. Acute cerebral anemia produces the same symptoms as cerebral compression, hence, high tension.

Obstruction of the cerebral sinuses and veins may be due to pressure on the inno-

*Read before the Allegheny County (Pa.) Medical Society, April 18, 1908.

minate or jugular veins, by a tumor or aneurism, to suffocation and strangling, to excessive strain, to tricuspid insufficiency, to embolism, to thrombosis, to arterial and venous degeneration, to ulceration, to abscess, and to hemorrhage. Weinburger observed in the case of a gardener of 36, an aneurism and rupture of the vessels, and the basil arteries and aorta were sound. An abscess due to a mycotic embolis may result in an aneurism or rupture of the vessel.

The causative factors in essential or permanent hypertension, according to some investigators, are due to a damaged regulating power of the visceral circulation. This high level of blood-pressure must be met by the mechanical complexity of automatic principles and is so maintained by hypertrophy of the left ventricle. Some writers (Hasenfeld, Hirsch, Janeway) assert that hypertrophy of the left ventricle is due to arterio-sclerosis, only when there is disease of the splanchnic arteries, or in the aorta above the diaphragm. Thus they exclude all other parts of the vascular system.

The hypertension of renal disease is a marked condition, concerning which many theories have been advanced. Bright, in 1836, first associated lesions of the kidney with a hypertrophied heart. He thought the causative agent to be irritants in the blood stimulating the heart abnormally or increasing the resistance of arteries and capillaries. Schlayer relates observations in this line, stating: "There is no relation between hypertension of nephritis and the functioning of the suprarenals." The hypotheses of Bright and other observers (Traube, Johnson, Gull and Sutton, Cohnheim) all have the essence of truth as deduced from clinical evidence. The cold facts presented

to us resolve the etiology of cardiac hypertrophy and renal disease into mechanical processes and pathological sequences.

In a given case of irritation of the vascular supply of the kidneys, we have, at first, hyperemia, and such being the case, faulty elimination of waste products, and blood over-loaded with toxins; then intensified inflammation of the kidneys, increased amount of blood through ingestion (as the persistent imbibing of large quantities of beer) vaso-motor spasm, high arterial tension, chronic inflammation, sclerosis, heart exertion, and hypertrophy follow. Janeway claims: "Increased resistance and diminished splanchnic compensation are essential hypotheses for the comprehension of arterial tension in the light of present knowledge, whatever the source of the irritant which provokes them." The splanchnic circulation may cover a multitude of sins, but, in my opinion, not that of arterial tension.

The production of nephritic types in the rabbit and dog by injections of turpentine, phenol, lead, mercury, or other irritants, or exposure to cold, elucidates step by step the pathological alterations in the kidney structure. I have observed the clinical course in the human organism simulate that of the dog and rabbit so closely that I am forced to believe my hypotheses correct.

I am convinced of the great influence of the nervous supply upon the vascular system as a whole or in part. Bishop believes that the cause of hypertonia vasorum is of nervous origin. Sclerosis or angio-sclerosis seems to me to be due to failure of the vessels to compensate for the increased work induced by etiological agencies. Thus we should recognize this most important

factor in sclerotic arteries, as well as in other pathological conditions in any part of the vascular system.

I shall not confine myself further to the causative agencies of hypertension of the whole vascular system, but to symptoms, and the effects of vascular hypertension on the brain. The symptoms of irritation are: oppressive headache, which is sometimes pulsating and aggravated by physical and mental effort, the sign of painful thought (Josué), vertigo, irritability, rapid pulse, epistaxis, restlessness, insomnia, and nervous phenomena as flashes of light, hyperacusis, transient tingling or heaviness of arms or legs, sometimes intense persistent neuralgias, and convulsive movements. The depressive symptoms are manifested by the obtunding of the senses. The anemia of the brain may be sudden, with pallor, weakness, vertigo, headache, flashes of light, subjective noises, rapid respiration, cool skin, and, in extreme cases, coma, convulsions, and death. If the onset is slow, there is somnolence, dullness, apathy, insomnia, headache, vertigo, tinnitus aurium and muscae volitantes. An attack of apoplexy may be sudden with unconsciousness, conjugate deviation, loss of motor power, loss of sensation, and perhaps, coma and death. Possibly headache, depression, choreaform movements, more or less parathesia, may precede the attack.

The general symptoms may begin with a feeling of fullness in the neck and temples due to hypertension of the cerebral blood-vessels. Tremor is present in a goodly number of cases.

The temporal and occipital headaches are generally the result of spasm of locally affected or diseased vessels, and are not of absolute diagnostic value, but should be

carefully noted in their association with other factors.

Vertigo is due to disturbed cranial circulation. Slight or spasmodic dyspnea, following errors of diet, is an important sign. Flashes of light, restlessness, insomnia, convulsive movements, and irritability, are the result of the action of the hypertonic vessels on cerebro-cellular repose. Depression or obtunding of the senses is due to anemia of the part, or pressure acting on the convolutions, which, when intensified, produces unconsciousness.

Generally, if the patient has not been under the care of an observant physician, he is not aware of any serious condition. He goes about his usual vocation until he is suddenly attacked, without warning; but some of the above symptoms may have preceded the attack. The sequence of the condition may be cerebral hemorrhage and its results: aneurism, embolism, thrombosis, encephalitis, anemia from pressure, edema, hyperemia, artery block, and death, prolonged or sudden.

The course and termination of hypertension of the cerebral vessels is inevitably governed by the gravity of the disease and the accuracy of the treatment.

To distinguish hypertension of the cerebral vessels from other conditions is, at times, quite difficult. It differs from acute alcoholism in so far as there is no pressure symptoms, or organic brain involvement. Opium poisoning is readily recognized by the pinpoint pupil, slow pulse, and respiration. Uremia is generally cleared up by the history of the case. Syncope is a symptom of circulatory failure and the duration of unconsciousness short. Cerebral embolism, apoplexy (a name that is applied to anything which produces a certain line

of symptoms), thrombosis, aneurism, and artery block, are the sequences of, or associated with, hypertension of the cerebral vessels, and confront us with one of the most difficult and delusive problems found in the diagnostics of internal medicine. The greatest importance attaches to correct diagnosis, for without it we are void of an accurate plan of treatment.

Artery block, a momentous condition in the study of hypertonia, may account for the source of a great deal of error in diagnosis. Many thousand sudden deaths occur yearly, which are erroneously imputed to heart, brain, or kidney disease; but in fact, are pure and simple cases of artery block. The post-mortem examination reveals no lesion of the above-named organs other than the condition of the vessels as a result of the block.

The block may be due to an active or passive hypertonic state of the cerebral vessels:

Active, such as, increased cardiac action, excessive ingestion of food or drink; acute alcoholism; general plethora; sunstroke; prolonged mental exertion; diminished blood supply to other parts of the body resulting from ligation of a large artery, or disturbance of the splanchnic circulation.

Passive, due to dilatation of the right heart, or pressure on the veins returning the cerebral flow of blood.

Spasms of the cerebral vessels, which may be toxic, tonic, or clonic, produce artery block and its possible sequences: Aneurism, apoplexy, thrombosis, embolism, or capillary hemorrhage, any of which may cause death.

I have long held the hypothesis that epilepsy is the sequel of an angio-neurotic arteric-stenosis, or disturbance of the circulation of the convolutions, producing in

accordance with the intensity of the spasm, le petit mal, or le grand mal. The foregoing hypothesis is not founded upon mere supposition, but upon clinical evidence presented by 52 cases cured by regulation of the circulation. L. Clark, in "The Lancet," London, attributes epileptoid attacks in tachycardia and bradycardia to withheld nutrition of the brain, without reference to sudden change in the blood-pressure in the cerebral vessels. In support of this theory, he cites Langerdorf's experiments in 1878. I think that recent experiments tend to show plainly the relation of artery block to epilepsy.

The use of the sphygmomanometer (Riva Rocci or modification) is of immense practical utility, for on its use great issues depend. All systolic and diastolic determinations should be made with the patient in the recumbent position. The pulse stability should be carefully measured. Tactile estimation of blood-pressure should be made of every accessible artery. The peripheral and venous circulation should be especially noted. The tympanic membrane will often times show incipient signs of high tension.

The ophthalmoscope should ever be kept in mind, as the eye frequently presents the first proof of hypertension of the cerebral vessels. Jackson asserts that the members of the medical profession at large do not appreciate the use of the ophthalmoscope in studying vascular lesions of the retina. With this statement, I heartily agree. Several observers (Benson, Harbridge, de Schweinitz, Zetmayer), have reported cases of transient blindness, during which the retinal artery was temporarily empty, soon refilling and becoming normal in appearance.

I have in another part of this paper mentioned the occurrence of spasms of the ar-

complete loss of function of the arterial picture of arterial disease. The explanation of these disturbances, and other arterial conditions. A disturbance may be the first sign of disease. I will state that the indication that the blood is coming from the carotid arteries and orbital veins emptying

stituted early, otherwise the prognosis is grave.

The treatment of hypertension of the cerebral vessels includes in part, the whole vascular system, but should be governed, mainly, by the etiological factors.

The diet is one of the paramount factors in the treatment of this condition. All meats should be excluded, at least, until the disease is greatly mitigated. A vege-



The Author's Instrument Riva Rocci modified for estimating Blood-Pressure of Cerebral Vessels.

into the cavernous sinuses, disease or injury, within the cranial cavity, is often manifest chiefly through disturbances of the circulation within the orbit.

The prognosis in mild cases, uncomplicated with kidney, heart, or arterial disease, is good. Simon's case exemplifies that recovery is possible in the case of red granular kidney when blood-pressure is reduced. Severe cases arising from the disease of the heart, arteries, or kidneys, may terminate favorably, provided proper treatment is in-

table diet should be adhered to almost exclusively, allowing moderate amounts of carbohydrates. The quantity of liquids must be restricted to distilled or mildly alkaline waters, whey, sour, skim, or butter-milk. Whey or sour milk are the most salutary articles of diet which we have at our command in the treatment of blood-pressure diseases. Tea, coffee, and alcoholics, should be absolutely avoided. The amount of condiments should be reduced to a minimum. Tobacco in any form is par-

ticularly deleterious in all cases of high tension.

Whatever the cause of high tension may be, complete mental and physical rest should be enforced, at least, until there is marked improvement. Then the periods of absolute rest may vary from two to three times a week, or until the usual routine may be again resumed. When allowable, moderate systematic exercise should be taken before meals. Massage is beneficial when properly applied; it stimulates peripheral circulation and promotes waste elimination. Tepid baths in a warm room, followed by a brisk rub with a rough towel, aid in stimulating the peripheral circulation. The Schott method is admirably adapted to this class of diseases.

Electricity may be used, and in some cases has given very good results. Electric light has a salutary effect on the peripheral vessels. Vibration has a tendency toward vaso-motor dilatation, and is especially active upon the splanchnic circulation.

In my cases, unless there are reasons to suspect immediate danger, I begin drug treatment by the administration of calomel 2 gr. at bedtime and a Seidlitz powder before breakfast. This I continue for one week, and repeat at such times as I deem necessary. Potassium iodid 3 gr. is given three times daily and gradually increased to physiological effect, and then reduced to 5 gr. combined with 3 gtt. Fowler's solution which is given three times a day after meals. This reduces the viscosity and has an antidotal effect on certain irritants in the blood.

The potassium element is highly irritant to kidney tissue and it is not advisable to continue its use for any great length of time. I have had patients, however, whose condition improved much better on potas-

sium iodide than on sodium iodide which was no doubt due to a special selection for certain irritants in the blood. Iodipin (10%) one teaspoonful t. i. d. is excellently adapted for sclerotic conditions. Biniodide of mercury 1-20 gr. three times daily acts well in some cases, especially if there is a luetic history. Nitroglycerine is a powerful and a reliable drug in hypertension. It should be administered on the tongue in 1-250 gr. doses every 30 minutes until tension is lowered; then three or four times daily. Aconite in four drop doses three or four times daily is valuable, but will not admit of continued use. Sodium nitrate is beneficial. The theobromin and caffeine group of diuretics can be efficiently used, or supplemented by digitalis, squills, potassium citrate, apocynum, and jalap as indicated.

The value of venesection in hypertension has been fully discussed in my papers on "Venesection; Its Therapeutic Value," published January, 1907¹, and "Blood-pressure in The Practice of Medicine," published April, 1908.² Kottman has confirmed my investigations concerning the effect of venesection on the viscosity of the blood. He states that venesection reduces the viscosity of the blood which may last for 21 days. In some of my cases, the attenuated viscosity lasted for 45 days. Venesection scientifically applied is a most valuable agent in blood-pressure treatment.

I advise all my patients who may be subject to hypertonia, to carry 3gtt. pearls of amyl nitrite to be used in an emergency. Erythrol tetranitrite is a drug of immense practical value. The dose is 1-2 to 1gr. The dosage should be small and frequently repeated.

¹ American Jour. Clin. Medicine.

² Medical Record.

The establishment of collateral circulation for the relief of high tension should not be forgotten.

I have tried to suggest the enormous importance of these vascular conditions that are so frequently encountered and that may be so readily studied by those who use the apparatus for measuring blood-pressure.

The usual arrangement of the subject matter has been somewhat departed from, though I have given a description of hypertonia with the intention of providing one complete picture of the condition. In my opinion, the arrangement facilitates a clearer comprehension of the subject, since it outlines in full and avoids repetitions and complications.

It may be the height of folly to deviate from the beaten path of conservatism in the endeavor to inaugurate a new name for a condition that includes a multitude of symptoms which have been heretofore designated as distinct diseases. The additions to medical literature are great, and any syndrome calls forth a new disease and necessarily a large medical name, until we have nomenclature ad infinitum. When we look into the condition fairly and squarely, we find a symptom and not a disease. It may be argued that it is a difficult matter so to do, but we are aware of many so-called diseases that may be classified with their variable phenomena under one head. In so doing we save time and labor, curtail nomenclature, and are enabled to concentrate our mind and energy on the conditions of essential importance. Thus the physician will be enabled to scientifically treat his patients; empiricism in blood-pressure disease will be ancient history, and therapeutic accuracy a certainty of the present.

624 Smith Block.

THE SUBMERGED TONSIL WITH SPECIAL REFERENCE TO CER- VICAL ADENITIS AND SYS- TEMIC INFECTIONS.*

BY

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This organ is probably more universally subject to operation than any other in the body. The term tonsillotomy most generally fits the case, for the tonsil, as a rule, loses only its protruding portion; seldom is it completely removed as it should be if diseased.

The function of the tonsil is still much in doubt. It manufactures leucocytes, as do also the lymph glands. Since the evidence is so overwhelming that the general health is improved by the removal of diseased tonsils, we should be guided by the facts as at present manifest.

It is also generally conceded that the tonsillar function is destroyed when the organ becomes diseased and permits the invasion of different bacteria to a greater or less extent.

What is a normal tonsil? Another question quite as hard to answer. The anatomists give dimensions in c. m. of what they generally find. J. Wright says that a tonsil which is demonstrable is probably pathological. Mere size signifies nothing. A tonsil may be very large and do no apparent harm, and again it may be very small indeed and cause the greatest damage to the individual.

The tonsils may be clinically divided into three classes.

1. The large round glands that hang almost free in the throat.

*Read before the Greenwich (Conn.) Med. Soc., March 2nd, 1908.

2. Those which partly protrude beyond the tonsillar pillars and are partly imbedded between them; and,

3. Those which do not protrude at all and are more or less covered over by the pillars. This latter is the so-called submerged tonsil.

The first class is the least harmful and probably most often removed for they are easily recognized, and as easily removed. The second and third classes cause the more general trouble and are less often recognized because the general idea is that the protruding and large tonsil is the offender.

The large tonsils (class 1) seem to resist bacterial invasion, especially tubercular, better than classes two and three, probably due to the fact that the crypts are open, while in classes two and three they are more or less choked up by the overhanging pillars and adhesions.

The lymphatic drainage of the tonsils is into a gland, at the angle of the jaw, just in front of the sterno-cleido mastoid muscle in the deep cervical chain. This has been demonstrated by Wood, Robertson and others. Robertson reports a case in which he opened this particular gland, removed its cheesy contents, and passed a probe through the duct to the tonsil; also a tubercular apex on the same side cleared up after the removal of the tonsil and this gland. I will refer to the relation of the tonsils to the pulmonary apices later.

The gland sometimes called the "tonsillar gland" will regularly swell when the corresponding tonsil is infected, acutely or chronically. The opinion of many good observers is that the lymphoid tissue of the throat is the point of entrance for measles, scarlet fever and other exanthemata; acute articular rheumatism, pero- myo- and endocarditis, arthritis, adenitis, osteo-myelitis,

strepto- and staphylo-coccus infections and possibly chorea, neuritis, certain forms of nephritis, pleurisy, iritis, phlebitis, Hodgkin's disease and appendicitis.

This is a formidable list to charge to the tonsils. Many seem very far fetched. Kretz may be entirely right when he says that the tonsils are causative factors in appendicitis, but it seems more rational to believe that the individual resistance to some particular germ was low and that it was merely coincidental that an inflamed tonsil preceded the appendiceal infection.

There seems to be good ground to believe that acute articular rheumatism, and certain joint and muscular pains that are generally covered by the term rheumatism, are due to tonsillar infection. I met a physician recently, whose tonsils I had treated some eight years ago for peritonsillar abscess. He informed me that not only had he no more quinsy, but that before his tonsils were treated he was subject to muscular rheumatism, which since that time had entirely subsided.

An attack of acute tonsillitis is at times complicated by endocarditis that may leave permanent valvular changes; also exudative nephritis has been reported.

Tuberculosis. The opinion that pulmonary tuberculosis is usually due to the inhalation of the tubercle bacilli and that they are carried directly to the site of the lesion is combatted by Von Behring, Calmette and Guérin, Schraeder and Cotton and many others.

It has been demonstrated by Calmette and Guérin's experiments upon goats that tubercle bacilli can pass through the intestines, and the first demonstrable lesion will be found in the mesenteric glands. In old goats the bacilli made their presence known by a characteristic lesion in the lungs, not

having left any mark on the mesenteric lymph glands.

Their opinion is that the immense majority of cases of pulmonary tuberculosis are not contracted by inhalation. Schraeder and Cotton, found on feeding guinea pigs with milk containing virulent tubercle bacilli, that one pig in five was affected, and that the bacilli could pass through the intestinal walls without causing any demonstrable lesion. They also state that from their experiments they believe that inspiratory infection is uncommon. Roux states it is incontestable that, in his opinion, the lesions in the tracheobronchial glands following feeding experiments are the results of alimentary canal infections.

Wood, of Philadelphia, in experiments on pigs, swabbed a culture of bovine tubercle bacilli on their tonsils and after several days found lesions in these organs and in the lymph gland that drains the tonsil. He also found in one pig five days after swabbing the tonsils no demonstrable lesion in the tonsils but characteristic lesions in the lymph gland, showing that the bacilli can pass through the pig's tonsil, like the goat's and guinea pig's intestines without leaving a telltale lesion. So much for animal experiments.

Grober believes he has been able to trace the pulmonary apex lesion direct from the pharyngeal tonsils through the lymphatics to the pleura about the apex. He has injected India ink and later at autopsy has been able to find the black pigment in the chain of lymph nodes down the neck to the pleura and the color could also be seen in the pleura. Pigments (as has been demonstrated by Wright and Goodale) readily pass through the tonsils where bacteria do not so readily do so.

Beitzke opposes Grober's theory and asserts that the bacilli can only reach the apex by the lymphatic trunk and venous circulation. He also states that by animal experiments he has been able to prove that there is no connection between cervical and bronchial lymphatics—certainly clinically we have all seen cases of tubercular cervical adenitis that reach from the angle of the jaw to the clavicle and behind it. Recently I saw a large mass of tubercular glands removed that extended directly down the neck behind the clavicle to a point immediately above the parietal pleura about the apex.

The cervical glands are often the site of chronic enlargement. These are by no means in every case tubercular, neither are these glands invariably infected by the tonsils, for carious teeth may be the cause; but excluding the teeth the tonsils are nearly always the portals of infection, and also nearly always the tonsils are submerged. Superficially these tonsils give little information. On casual inspection the anterior pillar is chronically congested, but on further examination the crypts will be found full of cheesy foul detritus that is loaded with micro-organisms, both good and bad. The supra-tonsillar fossa usually contains the same material. These crypts may be so covered by the anterior pillar that the pillar will have to be retracted to reveal them.

The submerged tonsils will regularly cause some slight glandular enlargement from toxic absorption. The patients may or may not give a history of recurrent sore throat, but they quite often speak of having a weak throat.

Primary active tuberculosis of the tonsils is an extremely rare occurrence, while secondary infection to advanced pulmonary tuberculosis is fairly common. Bandelier

found 100 cases in 900 inmates of the Collibus Sanitarium, but what is of more importance is the fact that latent tuberculosis is found in 5.2% of the ordinary run of tonsils in over 1,700 cases examined by different men. The personal equation enters largely into this complication. One man finding none in a hundred cases while another finds 26% in 30 cases. Robertson examined 232, found 8% latent tuberculosis and also that the small submerged tonsil was generally the infected variety. Wood's findings in regard to the submerged tonsil were similar. One observer will call every case tubercular if inoculation produces tubercular lesions in a guinea pig, though it is utterly impossible to exclude surface infection. Hess reports on 24 tonsils; out of 13 children, one tonsil of the lot produced tubercular lesions in a guinea pig. The bacilli were isolated and found to be bovine. He examined 100 sections of this particular tonsil without finding any lesion, which is fairly conclusive that it was a surface infection probably from milk. Probably a correct percentage has not been reached as yet; and again, the bacillus under certain conditions may pass through a tonsil leaving no lesions as would appear by the experiments of Wood on the pig's tonsil.

The bad drainage of the crypts in the submerged tonsil probably largely accounts for its liability to harbor trouble; the infection is also influenced by the number of bacilli present, their virulence, the immunity or resistance of the individual, and lastly by the condition of the tonsil itself.

The evidence seems clear that a tonsil that is causing the cervical glands to enlarge must come out, and all out; not tonsillotomy but tonsillectomy, for the latent

tubercular lesions are found in the deepest part of the tonsil, and to cut off one-half or two-thirds of the tonsil will only tend to seal up the remaining portion and aggravate the condition.

Why the general surgeon who removes tubercular cervical glands frequently has a return of the condition is because he leaves the primary focus. The tonsil should and must be removed in all cases, and also carious teeth, if he wishes to get satisfactory results. It makes little difference how, so long as it is completely removed. Many methods have been advanced, some of which are very complicated, while others seem to be dangerous. Of course, the safest and simplest method is the best,—that which gives the least danger of hemorrhage, traumatism and infection, and results in a smooth, white scar where the tonsil was formerly located.

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When both tonsils are to be amputated, better work can be done by waiting for the bleeding to subside after the removal of the first before operating upon the other.

In the treatment of leukoplakia of the tongue the use of strong irritant applications should be avoided, since they rarely do good and may lead to the development of cancer.

**SUNLIGHT AND SOLAR-THERAPY
IN ITS RELATION TO TUBER-
CULOSIS.***

BY

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You probably have heard of the views concerning the supposed danger of sunlight in tuberculosis recently advanced by Major Charles E. Woodruff of the U. S. Army Medical Service, particularly his contention that the blond type is especially susceptible to the dangerous influence of sunlight and that these would do better in cold than in warm climates, and the brunettes better in warm climates than in cold, and that the improvement in winter and the well-feeling in the morning was due to the absence of sunlight.

To learn the consensus of opinions on this subject prior to the preparation of my recent paper read on June 6th before the National Association for the Study and Prevention of Tuberculosis, I addressed some fifty letters to leading authorities and particularly to experienced phthisio-therapists. Nearly all replied and from forty odd expressions of opinions from men who have a right to speak authoritatively we learn that the blond do no better in cold weather or colder climatic regions than those having brown or black hair; that brunettes do no better in warm weather or warmer climates, that sunlight is not harmful in cool or cold weather, providing the patient is careful to protect his head, and that the improvement in winter is to be ascribed to the cold and not to the absence of sunlight. A similar opinion

is held by the majority in regard to the question that the relative well-being of the patients in the morning is to be ascribed to rest and not to the absence of sunlight. Concerning solar therapy the majority have declared themselves in favor of it. It would thus seem that solar therapy is by the majority of men considered as a valuable adjuvant in phthisio-therapy.

Solar therapy is not good for everyone, even in our temperate zone, but certainly it has proved beneficial in many cases in the hands of others and my own. The directions I am in the habit of giving my patients regarding the sun when outdoors are something as follows: Never walk in the bright sunlight without having your head covered. When taking the rest-cure, have your body bathed by the rays of the sun, but keep your head in the shade; if the glare of the sun causes your eyes to feel uncomfortable, wear smoked glasses; when you are feverish do not take any sun-baths. Should the prolonged exposure to the sun give you headache, cause a rise of temperature, or make you feel uncomfortable in any way, discontinue these sun-baths until the physician orders them to be resumed.

I believe in the direct sun-baths for tuberculous patients, but I also believe that the utmost caution is necessary. I attach so much importance to this that when ordering sun-baths indoors, I give each patient the following specific directions:

The sunniest room should be selected for the purpose. Fixed carpets should not be placed in such a room, and the floor must be kept scrupulously clean.

In a private home, where neighboring windows are often near, the arrangement will be somewhat difficult, and low screens may have to be used. In winter the room should be heated to from 70° to 75° F. By

*The above is a portion of Dr. Knopf's inaugural address as Professor of Phthisio-therapy of the New York Post-Graduate Medical School and Hospital, delivered June 19, 1908. The address was entitled "How to Adapt Sanatorium Methods to the Treatment of Consumptives at Their Homes."

and by the patient's skin will be less sensitive to the air, and the temperature of the room can be decreased. The room must always be well ventilated. In summer the upper part of the windows can be left open.

The patient undresses entirely, but if he complains of cold feet, he can keep his stockings and even his shoes on until he has become warm enough and desires to take them off. He places first a warmed sheet around his body, and then a large blanket; he then lies down on the floor in the sun, the head in the shade and slightly elevated by a cushion. As he begins to feel the warmth of the sun, he uncovers himself gradually until the whole of his body is exposed to the rays of the sun; he exposes his back by turning on his chest. He remains in the sun-room for from half an hour to two hours, according to the directions given him by his physician. He may change the recumbent to the sitting position, or walk about.

Like all curative agents in the treatment of phthisis, sun-baths should not be taken without the supervision of the physician. Too much exposure may cause irritating skin troubles. To prevent these the patient should cover himself with one or even two layers of the sheet whenever the sun's rays produce a slightly burning sensation. Should these cutaneous complications occur nevertheless, the baths must be omitted for a time and the skin bathed in warm water and friction with lemon juice applied. Head-ache or a feeling of discomfort is the signal to stop, no matter how short the bath has lasted. When there is a temperature above normal (98.6° F.), sun-baths should not be taken, and the patient should remain in bed. Slightly feverish patients may take sun-baths; but when experience shows that

the baths are followed by an elevation of temperature, they must be discontinued.

While taking the sun-bath the patient should do some deep breathing.

If it is not possible to have enough sun-baths while undressed at home, patients should take them outdoors, dressing in light-colored clothes—never in black, red or brown—so as to permit the better penetration of the actinic rays. Patients should always take an umbrella or parasol with them, so that they may shade their heads, no matter where they take their sun-baths.

To avoid all possible misunderstanding, I wish again to repeat that the indication for solar-therapy and its methods of application will depend not only upon locality (altitude, latitude, and other climatic factors), upon the season of the year, upon the disease for which it is prescribed, but also upon the idiosyncrasies, that is to say, peculiar susceptibilities, of the individual. Never should solar-therapy be resorted to without direction of a competent physician. For patients who, for example, are subject to frequent haemoptyses, I think direct sun-baths absolutely contraindicated. The number of sunny days in our temperate zone in addition to altitude have been heretofore largely our guidance regarding the selection of climate for our consumptive patients.

To justify my enthusiasm for sunlight as a means to prevent disease, particularly tuberculosis, and my reasons for advocating solar-therapy as a most valuable adjuvant in the treatment of consumptives, allow me to repeat what I said in Chicago the other day.

Those of us who work among the poor in the tenement houses know only too well

how much more frequently tuberculosis develops in the houses of the poor, where the majority live, sleep and work in dark rooms, where the sunshine never enters or enters rarely. Let me quote in regard to this from a letter received as recently as May 2d from Mr. Robert W. de Forest, President of the New York Charity Organization Society and former Tenement House Commissioner:

"More than 300,000 persons sleep every night in dark, unventilated interior rooms in tenement houses in this city. These rooms have no windows even to adjoining rooms. This state of affairs is largely responsible for the fact that 10,000 persons die of tuberculosis in New York each year."

Scrofulous diseases, local, bone, skin and joint tuberculosis we find most frequently among children of the sunless tenement houses in large cities, rarely among children reared in the country where they are exposed to a great deal of sunshine. Thus it would seem that the men dealing with tenement house problems and tuberculosis among the masses are in favor of light and particularly of sunlight as a powerful preventive factor in tuberculosis. There is no tendency among them to wish to revise the old Persian saying: "Where sun does not enter the physician enters often."

The wonderful results obtained in the climatic resorts in the high altitudes of Switzerland are ascribed by close observers to the great amount of sunshine in those regions, and we may justly claim the same for our own beautiful climate in New Mexico, Arizona, Southern California, and other southern regions, also for the higher regions in the eastern sections of the country.

So much for the ordinary influence of sunlight on the average individual and the average tuberculous patient in our temperate

zones under average conditions. That there is another side to the question and that Major Woodruff is right in some respects no unbiased observer will deny.

There is no doubt that in tropical countries a newly arrived person who has been born and raised in northern climates, be he blond or brunette, unless he leads an exceedingly sober and careful life, and protects himself against the strong actinic rays of the sun and the intense heat of midday, is bound to suffer and become more easily a victim of endemic and epidemic diseases, not excluding tuberculosis. And even in our temperate zones in hot weather, when every one feels better in the shade, it is, of course, absurd to expect a patient (unless he feels chilled) to remain in the sun and be comfortable.

Every well-equipped sanatorium will not only have rest-cure galleries exposed to the south, but also such in the exposure to the north, where patients can seek the shade and the cool when the sunny side is uncomfortably hot.

GANGRENE OF THE FINGERS: REPORT OF A CASE.*

BY

JOHN A. CUTTER, M. D.,

of New York,

H. G. McDONALD, M. D.,

of Hackensack, N. J.

This case which occurred in the practice of Dr. McDonald was that of a widow in her 79th year; mother of seven children. November 1st, 1907, was ill with bronchitis followed by rheumatism; this by bronchopneumonia; improvement followed this sequence of illnesses until March 10th, 1908, when she suffered from a slight stroke of

*Presented to The Medical Society of the Borough of The Bronx, June 10, 1908.

apoplexy, the condition to be described then ensuing. Seen by Dr. Cutter as consultant, March 28th; the tips and palmar surfaces of the distal phalanges of the thumb and first three fingers of the right hand were ulcerated deeply; the nail of the middle finger was eventually lost; the tip of the little finger barely affected; otherwise than the ulcerations, the thumb and first three fingers presented color conditions varying from a charred black to a yellowish brown, and at the first phalangeal joints there were circular rings of black. Urine was normal, likewise the heart except for the weakness of old age; the blood showed fairly good color of red corpuscles; no marked increase of white corpuscles; covering a good portion of the field was a mass of fibrin filaments, 1-300th of an inch in length. The abdomen was greatly distended with gas. She had been taking ten drops of saturated solution of potassium iodid t. i. d. and a preparation of iron; ulcerations were dressed with an ointment of aristol and carbolic acid. Potassium iodid and dressings continued and mild purgative doses of Carlsbad Sprudel water given. As a mild stimulant and tonic, Johann Hoff's Malt Extract with iron substituted for the iron preparation. Seen weekly by the consultant several times later, the blood was found free from the fibraemic condition noted on his first visit; the bowel distention slowly diminished and at the time of this presentment there is entire healing of the fingers, the skin being almost white. Patient had been in bed over twenty weeks but is now about in her home.

The blood examinations were made with a clinical microscope (as invented by E. Cutter, M. D., 1873). Tolles one-fifth inch objective and one inch eye piece, no staining, but direct method of study of fresh

blood as taught in the "dark days of haematology," so described by some of the present generation. The men who did the pioneer work in those "dark days," also taught that gangrene, unless due to trauma, diabetes or other constitutional condition, was a disease of the enfeebled circulation of the aged, its exciting cause the presence in the blood of fibrin filaments in excess; they further taught that said fibraemia was due to long continued fermentation in the intestines, the carbonic acid gas partly paralyzing the blood glands so that they spun out fibrin filaments in excess and if the fermentation went on to the acetic acid stage, the vinegar thereby produced, specially aided in inducing this fibraemia; this is seen in rheumatism, when sugar is specially paramountly contra-indicated as it is so prone to undergo the alcoholic and acetic acid fermentations. Indeed, this simple method of study is the only one to differentiate in apoplexy as to the cause being a ruptured fatty degenerated blood vessel or a thrombus of said vessel.

Parenthetically, the consultant in this case, over fifteen years ago studied acute thrombotic conditions in an epidemic of hog cholera, the predisposing cause of said epidemic being excessive feeding of sour fermenting foods and the exciting cause a spell of severely cold weather. Inspection showed a large proportion of the herd to be doomed; the animals exhibited signs of mental distress and paralysis more or less extensive of hind extremities, with dark bluish swellings under skin. Blood morphologies of animals living were taken and then the animals slain; (a method of disease investigation which is of course impossible in humans); the blood examinations showed fibraemia in excess, a ropy and sticky condition of the red corpuscles and

distention of the white by entophytal vegetations, while the autopsies revealed thromboses of skin, extremities, heart, lungs, intestines and mesenteries in varying extent. The brains unfortunately were not studied. Man and the hog agree more in their internal anatomy and habits of feeding than any other animals, and it was with regret that this vast field for pathological study had to be left in a few hours.

The diameter of a capillary blood vessel is 1-3000th of an inch; of a red blood corpuscle 1-3200th of an inch; man normally has a free blood stream with corpuscles flowing easily through the microscopic capillaries. In this old woman there is an antecedent history of cerebral deposit of fibrin; then with the slow beating heart, the emboli stopped terminal circulation of the fingers. Therapeutically, the writers expected no such good outcome as has been experienced; iodid of potash has long been known as a solvent of fibrin filaments in rheumatism and thrombosis; its exhibition in this case was of supreme importance; the Carlsbad Sprudel water aided much by cutting down fermentative causes in the intestines. As to food and drink, hot water was exhibited as much as possible and sweets in all forms were forbidden. Doubtless a close diet of beef would have been of value, but as a matter of fact, not much food was eaten.

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*The above is a partial list and is only given to show that recent investigations demonstrating that thromboses are not necessarily due to thickening of the intima, have been preceded by a good deal of work.

THE DIAGNOSIS OF TUBERCULOSIS BY VON PIRQUET'S CUTANEOUS REACTION.

BY

FRANK L. CHRISTIAN, M. D.,

Senior Physician of the New York State Reformatory, Elmira, N. Y.

In applying the Von Pirquet's cutaneous reaction, it is directed that the skin shall be scarified in the usual manner for vaccination. Pirquet treats the scarified areola with a 4% solution of tuberculin "Old." Other observers use from 1 to 4% solution. "If the patient is tuberculous there appears within forty-eight hours a papule surrounded by a hyperemic zone one inch to one and one-half inches in diameter. The disappearance of this papule is often followed by a brownish pigmentation of the skin which may persist for some time. The reaction has various degrees of severity, from a very small papule to a large and intensely inflamed area. However, the severity of the reaction is not a measure of the extent of the tuberculous process. The reaction is not attended by general symptoms such as fever and malaise.

The tests were made by scarifying three small areas about two inches apart and applying the ointment to two of these areas, using the third, the center one as a control. The reaction begins in from four to eight hours. In most instances the reaction was still quite evident at from two to four days after the inunction. No inconvenience was experienced, no rise of temperature or malaise; the usual manifestation was a red areola about the scarifications, some slight

swelling, itching and in some the formation of small nodules, all of which disappeared in a week or less.

The advanced cases do not react as is well known and demonstrated by the ocular reaction.

The severity of the reaction is in no way a measure of the severity of the tubercular infection.

In the following tests the most pronounced reaction was in a fairly recent case of tubercular adenitis.

The writer has noticed a close relationship between the reaction obtained (by use of Calmette test) in tuberculosis and in articular rheumatism. Owing to the obscurity of the etiology of rheumatism this fact gives some cause for reflection.

CUTANEOUS TEST FOR TUBERCULOSIS.

(Von Pirquet Reaction using H. K. M. & Co.'s No. 2.)

No. 1. Age 19. Advanced pulmonary tuberculosis. Frequent haemoptysis. T. B. in sputum. *Reaction negative.*

No. 2. Age 19. Pleurisy with effusion, no doubt tubercular in origin. No T. B. found. *Reaction marked.*

No. 3. Age 20. Incipient tuberculosis. T. B. present. *Reaction positive.*

No. 4. Age 22. Advanced pulmonary tuberculosis. Hopeless condition. T. B. present. *Reaction negative.*

No. 5. Age 19. Advanced pulmonary tuberculosis. T. B. present. *Reaction negative.*

No. 6. Age 28. Strong and healthy man. Tested for control. *Reaction negative.*

No. 7. American Indian. Age 17. Pulmonary tuberculosis. Tubercular cervical adenitis. T. B. present. *Reaction positive.*

No. 8. Age 18. Pulmonary tuberculosis. Tubercular cervical adenitis. T. B. present. *Marked reaction.*

No. 9. Age 19. Polish. Tubercular cervical adenitis. No T. B. found. *Reaction marked.*

No. 10. Age 18. Italian. Incipient pulmonary tuberculosis. T. B. present. *Reaction marked.*

No. 11. Age 25. Acute articular rheumatism. Endocarditis. Lungs normal. *Reaction negative.*

No. 12. Age 20. Normal healthy lad. Tested for control. *Reaction negative.*

No. 13. Age 20. Negro. Advanced pulmonary tuberculosis. Patient bed ridden. T. B. present. *Reaction negative.*

No. 14. Age 18. Italian. Advanced pulmonary tuberculosis. T. B. present. *Reaction negative.*

No. 15. Age 21. Negro. Tubercular cervical adenitis. Pulmonary tuberculosis. T. B. present. *Reaction very marked.*

No. 16. Age 20. Acute articular rheumatism. Anaemic. Emaciated. No T. B. found. *Reaction very mild.*

No. 17. Age 28. Negro. Incipient pulmonary tuberculosis. T. B. present. *Reaction positive.*

No. 18. Age 28. Hebrew. Incipient pulmonary tuberculosis. T. B. present. *Reaction positive.*

Acute infectious diseases, such as typhoid or rheumatic fever, scarlatina, measles, etc., may result in so marked distention and relaxation of the joints that luxations readily occur from slight causes, such as sudden movements in bed. Reduction can usually be easily accomplished, but, if necessary, an anesthetic may have to be administered.—*Int. Jour. of Surgery.*

RECENT LITERATURE ON DERMATOLOGY AND SYPHILIS.

BY

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Philadelphia, Pa.

CUTANEOUS REACTION TO TUBERCULIN.—

During the last two years numerous papers have been written on vaccination with tuberculin. Although this method is as yet in its infancy, it apparently lacks a great many of the disadvantages and dangers of the older procedure, that of the hypodermatic subcutaneous injection. Butler (*Medical Record*, Feb. 1, 1908) has written an entertaining article on this subject. The technique for the vaccination is very easy. A twenty-five per cent. solution of old tuberculin is prepared in salt solution. Another mixture is also used with a similar dilution; one volume of a five per cent. carbolic acid solution in glycerine, being substituted for one of the volumes of the salt solution. Two drops, one of each solution, is placed on the arm, separated by the space of two inches. A small lancet is then used to abrade the skin through the vaccine drops by a rotary motion, removing only the upper layers of the epidermis. The tip of the lancet is then cleansed, and at a point mid-way between the vaccination marks a third abrasion is made, without any tuberculin being applied, to act as a control. If the reaction is positive, a papule, varying from five to twenty millimeters in diameter, at first bright-red, and later dark-red with a slight areolar, will appear at either vaccination point, in from twenty-four to forty-eight hours. In positive cases in which revaccination is performed, a similar reaction occurs. As a rule there are no constitutional symptoms following its use, and the local outbreak disappears in a few days. Moro (*Wiener klinische Wochenschrift*,

No. 31, 1904) however has reported cases in which phlyctenular conjunctivitis, rhinitis, and a tuberculide have supposedly been caused by the tuberculin vaccination. As this is solely a diagnostic test, post-mortem examinations, or the positive finding of the tubercle bacillus during life, will have to prove its accuracy. Pirquet (*Wiener klinische Wochenschrift*, No. 38, 1907) following out this procedure, found one hundred positive autopsies, the patients having responded to the cutaneous test during life. Butler draws the following conclusions: that a positive reaction in a child is diagnostic of tuberculosis; that failure of the reaction is of little antidiagnostic significance in the terminal days of a tuberculous infection; also that its result in cases of obsolete tuberculous foci might prove negative, unless vaccination was repeated. He finally states that results are somewhat unreliable. Freer (*Muenchener Medizinische Wochenschrift*, Jan. 7, 1908), and Ferrand and Lemaire (*Presse Medicale*, September, 1907) have recently written upon this subject. Freer considers this method of great help in cases in which the diagnosis is obscure. He, the same as Butler, considers a positive reaction, almost diagnostic of tuberculosis in young children. He also states in the paper that Calmette's ophthalmo-tuberculin test should not be used in scrofulous children, because of the frequent appearance of phlyctenules. Ferrand and Lemaire in their tests obtained a positive reaction, in the tuberculin vaccination, in twenty-nine out of forty-nine of those tried. The results so far at least, have been far more accurate and constant in the older subcutaneous, than in the newer cutaneous, and conjunctival methods.

ERYSIPELAS.—Three interesting papers have been written on this subject dur-

the last few months. Boston and Blackburn (*Jour. Amer. Med. Assoc.*, 1907, p. 520) have made a statistical study of 564 cases. Schorer (*Amer. Jour. Med. Sci.*, Nov., 1907) has written on this subject from the standpoint of opsonic treatment. Holmes (*Annals of Otology, Rhinology, and Laryngology*, September, 1907) has compiled a long and elaborate paper on the etiology. According to Boston and Blackburn the greatest number of cases occur during the winter months and the fewest in the summer. The colder the weather, the greater are the number of the cases, and the more fatal is the disease. During the first year of life the mortality is 100 per cent.; over the 80th year it is 83 per cent.; and between seventy and eighty years of age it is 38 per cent. The duration of fatal cases is shorter during early adult and middle life than in infancy and old age; probably because of greater virulence and more complications. In the senile there is usually a low grade of infection and extensive spread. Acute nephritis was found in most of the fatal cases. Glycosuria was present in five of the cases. The face was involved in 485 of the patients. Schorer in his paper describes the treatment of thirty-six cases of erysipelas, by the Wright and Douglas opsonic method. It was not found practical to isolate the streptococcus from each case; so a uniform mixture of streptococci, from four cases of erysipelas, was used to determine the opsonic indices, and to make the vaccines. Erysipelas causes an increase of the opsonic index, which reaches its maximum about the third day of the disease, and is followed by a gradual fall. In the first few hours following an injection of killed cultures, there may be a slight rise of temperature; only temporary, however. According to Schorer, these injections cause

an earlier exfoliation and shorten the attack. They do not however prevent relapses of the disease, or localize the migratory forms. The opsonic index is subject to great irregularity, so much so that it gives little indication of the severity of the disease, and helps but little in the prognosis. The conclusions to be drawn from Holmes' paper are as follows; that the streptococcus is the cause of erysipelas; that as the streptococcus normally is found in the nose, throat, mouth, and probably the accessory cavities, and the ear, a slight injury to any of these parts may cause the development of erysipelas; the face then is the part of the body chiefly attacked by this disease because of its proximity to the cavities normally containing streptococci; in most cases the erysipelatos outbreak on the face is secondary to injury of nose, throat, or the accessory cavities.

DIPHTHERIA OF THE SKIN.—A false membrane formed on the skin of diphtheritic origin, is of rare occurrence. Slater (*The Lancet*, London, Jan. 4, 1908) describes a very interesting case in a girl, thirteen years of age. Three years ago the girl was treated for an inflammation of the eyes. This was followed in two weeks by the development of white patches, with a thin discharge; one on the inner surface of each labium. Blisters then appeared on the vulva, and the lower abdomen; increasing in number until they became generalized. She remained in the hospital for five months, the trunk improving somewhat under local and general treatment. When she came under A. B. Slater's care a confluent mass of vesicles was noted on the left side of the mouth, extending to the cheek, also groups on the eyebrows, ears, head, neck, shoulders, breasts, upper back, and the vulva. Thin clear fluid oozed out from

these patches. Bacterial examination of the fluid showed organisms resembling the Klebs-Loeffler bacillus. Inoculations made into a guinea-pig caused its death; the positive diphtheria bacillus being obtained from the same. Antitoxin injections were immediately begun, with a marked improvement after the first treatment. Fifteen thousand units were administered over a space of two weeks, with the entire disappearance of the lesions. The disease apparently started as an acute attack of diphtheria, the primary seat being the eyes.

LUPUS VULGARIS ARISING SECONDARY TO TUBERCULOUS LYMPHATIC GLANDS.—This interesting phase of the subject is described, somewhat in detail, in a recent paper by H. Emlyn Jones (*Brit. Jour. Derm.* 1907, p. 385). The review of the subject is statistical, as it classifies 923 cases of lupus vulgaris. He found that 11.4 per cent. or 102 cases had their beginning secondary to tuberculous glands, either in the scar, or in gland-abscesses. He found that almost fifty per cent. of the cases had tuberculous glands, but that only in about one-fourth were they the source of cutaneous inoculation. The submaxillary glands were the chief source of the skin infection. The glands of the anterior, and posterior triangles of the neck, the pre-auricular, the submental, the popliteal and the gland just below the elbow supplied, in the order named, their share. Sixty-three females, and thirty-nine males were attacked. The great majority of the cases occurred under ten years, a few between ten and twenty, and only two above this age. The treatment by means of the X-ray, and Finsen light was also described.

ACUTE LUPUS ERYTHEMATOSUS, ENDING FATALLY.—Lupus erythematosus, as seen in this country, is a comparatively mild, although disfiguring disease. Exceptionally severe cases are

seen in England, but the majority have been described by Kaposi. T. S. Short has recently written (*Brit. Jour. Derm.* 1907, p. 271) the details of a fatal case, with complete autopsy findings. Clinically he noted the following:

- (1) Symmetrical distribution of the lesions on the cheeks, where the skin was dry and superficially thickened, with erysipelatous swelling of the neighboring parts.
- (2) Bullous affection of the pinna of each ear, breaking down to form sloughs.
- (3) General enlargement of the lymphatic glands in the axillae and the groins.
- (4) Painful subcutaneous nodules over the sacral region.
- (5) Albumin in the urine.
- (6) Small ulcers on the palate.
- (7) Rapidly fatal course of the disease.

SKIN DISEASES IN THE NEGRO.—But few papers have been written on the peculiarities of cutaneous affections in the black race. Because of the deeply pigmented skin, even those with large clinical opportunities, may have difficulty in arriving at the correct diagnosis. Howard Fox has recently published a complete and interesting paper (*The Journal of Cutaneous Diseases*, Feb., March, 1908) on the relationship and the differences between skin diseases in the white and negro races. A statistical comparison of the more usual diseases of the skin has been collected from all parts of the country. He draws the following conclusions in his paper:

- (1) In spite of the fact that the negro is more susceptible to disease in general than the white man, and that his mortality is twice as great, he suffers less frequently and less severely from diseases of the skin.

CORRESPONDENCE.

SOME REMARKS ON ANTITOXIN.

Northampton, Mass., June 11, 1908.

To the Editor American Medicine.

I have just opened the May issue of American Medicine. The statement in your editorial as to the constant decrease in the income to our profession has a chilling effect upon all the members thus situated.

My comment, however, here is upon your later statement that "we must now be in the dark ages if the great State of New York cannot send Mrs. Jordan and the managers to prison for long periods" for refusing to permit the use of anti-toxin in the case of children sick of diphtheria at the Winchester Temporary Home at White Plains.

As to the wisdom of using anti-toxin in diphtheria, there is, at present, no unit of opinion in regular medicine. No evidence has ever been offered which would convince sane men in our profession that anti-toxin cures diphtheria. So far as I know, other remedies are always employed before, along with and after the use of anti-toxin in a given case, or a series of cases under treatment. I have read of no exceptions—I have met no advocates of anti-toxin, who excluded all other measures of treatment along with anti-toxin.

Under these circumstances, we certainly have no evidence of the intrinsic value of anti-toxin in the cure of diphtheria, which would lead any judge or jury to imprison a doctor, or manager of a child's retreat, because they refused to employ anti-toxin.

I believe that regular medicine is doing more to antagonize regular medicine than any of the newer schools. Our efforts to make compulsory, by law, any mode of treatment which our patrons or the public have a mortal aversion to should fail, as they have always failed.

The two rather recent "scientific" ways of exalting medical and surgical distinction, it seems to me, must result in further diminishing the confidence of the thinking, rational classes of the men and women of our age. I refer to the use of the anti-toxins, and the surgeon's knife, which has an affinity for the appendix, not only, but for every organ behind the curtain, to which an ache or pain can be attributed.

(2) The full-blooded negro is almost immune to ivy poisoning.

(3) Acne is less common and much less severe in the negro. Rosacea is a rare and very mild affection. Eczema is perhaps not less frequent, though certainly less severe. Psoriasis in the full-blooded negro is very uncommon.

(4) The negro skin is decidedly less susceptible to external irritants.

(5) Tuberculosis of the skin is not more common in the negro in spite of the great prevalence in this race of pulmonary and other forms of tuberculosis.

(6) Syphilis is certainly more common in the negro than in the white. It is probably no more virulent. Tertiary forms are not more common. A tendency to the annular syphilide as well as to the keloid, elephantiasis, and fibroma, deserves to be classed as a racial peculiarity of the negro.

(7) The negro is more subject to new growths of connective tissue origin and less so to those originating in epithelial structures. Cutaneous epithelioma is very rare in the full-blooded negro.

(8) The mucous membranes as well as the skin are less susceptible to disease. Leucoplakia is rarely seen in the negro.

(9) Many rarer forms of skin diseases are observed in the negro as well as in the white race.

(10) Mulattoes are more susceptible to skin diseases than negroes, especially to chloasma.

Fracture of the scaphoid bone of the hand rarely occurs alone, but is usually complicated by fracture of the radius. In view of the fact that firm union of the fragments rarely takes place, the best results are obtained by early removal of the proximal end of the bone.

Let us not ask for further legislation and prison penalties to compel public patronage. Let us better know how life came and went before we graduated.

JOHN BARR LEARNED, M. D.
Northampton, Mass.

(*American Medicine* gives space to this communication in accordance with its established policy of denying no worthy medical man a respectful hearing. But Dr. Learned's opinions do not harmonize with ours, and the Editor feels that the value and utility of diphtheritic antitoxin has been too well established to require any extended comment. Too many times the Editor has seen the prompt effect of antitoxin on the dread disease diphtheria, to fail to appreciate its value, or to neglect to thank God every time he employs it, that scientific medicine has done so much for humanity.)

Dr. Learned is entitled to his belief, just as were the good people who insisted that the world was flat something like 400 years ago, but Christopher Columbus went on and proved it round, and the great bulk of the profession are going on lowering the mortality of diphtheria by the intelligent use of a remedy that has furnished its own best argument.)

THE FIRST OPERATION FOR APPENDICITIS.

June 13, 1908.

To the Editor *American Medicine*.

My attention has been called to the article on "The First Operation for Appendicitis" on page 94 of the February number of your journal. As no mention is made of the case of Dr. W. W. Grant in 1885, I thought it only fair to call your attention to it. Dr. Grant is a trustee of the A. M. A. and President of the Western Surgical Association, and is practicing in Denver, Colo.

In December, 1882, he diagnosed the case as perforation of the appendix, but as the operation early in January did not locate it, he hoped the wide and deep drainage would permit the trouble to heal after a while. After some months of disappointment I, the patient, remember how often he suggested, *during that year*, the removal of the appendix, but the family would not hear to it and we still hoped, and in May, 1884, my brother in Chicago sent Dr. Andrews to Davenport to settle the matter. He would

not consent to Dr. Grant's proposition either and it was only some months after his plan failed that Dr. Grant had permission to go ahead. The Kronlein operation was performed while we interfered with Dr. Grant's wishes and judgment, but his *suggestion* was certainly made prior to "Fenwick's in 1884."

The Cincinnati Lancet-Clinic, May, 1902, contained a report on appendicitis by B. Merrill Ricketts, Ph. B., M. D., of Cincinnati, in which Dr. Grant's operation was mentioned as being a little over two years prior to that of Dr. Morton.

I have written this merely because I want to see credit given where due, but in case you are interested I enclose a Reprint from *Colorado Medicine* for your perusal. Very truly,
(MISS) M. H. GARTSIDE.

ETIOLOGY AND DIAGNOSIS.

Differential Diagnosis Between Concealed Hemorrhage and Shock.¹—In the absence of a history of either trauma or bleeding, without evidence of free fluid in cavities and without a blood examination, is it possible to differentiate with certainty between shock and hemorrhage? We believe it cannot with certainty be done. Are there any characteristic changes in the blood picture which will serve to differentiate?

In shock, according to Crile, the arterial circulation has failed because the blood has accumulated in the veins, especially in the venous trunks; in hemorrhage, the arterial circulation has failed because the blood has left the vascular system. In the one case there is an intravascular hemorrhage; in the other an extravascular hemorrhage. The circulatory phenomena are virtually identical. In a number of clinical observations of the donors during 51 transfusions, and in subjects of intentional bleeding, as well as in experimental research in which the blood pressure of two animals was simultaneously reduced at approximately the same rate by shock and by hemorrhage, and in which continuous observations were made, we were able to draw the following conclusions:

Hemoglobin.—In shock, there is either slight or no fall, or a rise in hemoglobin

¹Geo. Crile, M. D., Cleveland, Ohio, Boston Med. and Surg. Jour., June 25, 1908.

from the beginning to the end of the experiments; in hemorrhage, there is first a period during which there is little or no fall in the hemoglobin; this period may continue until the loss of a fourth, a sixth or a tenth of a fatal amount of blood. A steady fall in hemoglobin then begins and continues until death, though the total fall may be perhaps no more than 20%. The fall in hemoglobin may progressively continue as long even as twelve hours after cessation of hemorrhage.

Red Count.—The red count follows rather closely the curve of the hemoglobin in both hemorrhage and shock.

Leucocytes.—The leucocyte count in shock shows relatively slight changes, although a considerable fall is sometimes noted. In hemorrhage a rising leucocyte count is noted in every instance, beginning promptly, often before the hemoglobin or red count has altered. In the clinic and in the laboratory there are scarcely any exceptions to the rule of a rising leucocyte count in hemorrhage.

Summary.—Summarizing, then, in the beginning of an acute hemorrhage, the first and immediate change in the blood picture is a rising leucocytosis. A little later the hemoglobin and the red count begin to progressively fall, continuing up to twelve hours after hemorrhage has stopped. In shock, there is usually no rise in the leucocyte count and little or no change in the hemoglobin or red count.

Conclusion.—Therefore, repeated and accurate observations upon the blood picture may differentiate between hemorrhage and shock.

The Diagnosis of Cystitis¹ —Many cases come to us, says Pilcher with a diagnosis of chronic cystitis having resisted all forms of treatment, with varying periods of improvement but with constant relapses. The reason for the failure in many of these cases is an insufficient knowledge of the predisposing factors. Unless the source of the infection be discovered and removed, local treatment will be unavailing.

The steps necessary to establish a diagnosis of cystitis include (1) the history of the illness; (2) the examination of the pa-

tient; (3) the examination of the urine; and (4) an examination of the mucous membrane of the bladder by the aid of the cystoscope.

Hyperemia of the trigonum, as described by Kelly of Baltimore, is a condition which is often mistaken for cystitis. The trigone is deeply congested, a rosy red in color, extending to and often involving the ureteral openings; the mucous membrane is swollen and there is a varying degree of edema which can be easily appreciated by vaginal examination. The symptoms are characteristic; there is frequent desire to empty the bladder, sometimes present both day and night; the patient complains of burning sensations and pressure or bearing down at the neck of the bladder; the passage of urine is accompanied by some pain, but the greatest distress is present after voiding the water, the sense of weight and pressure remaining for some time. When, in addition, the urine is concentrated or highly acid, the suffering is greatly increased, and urgency of micturition may be present every few minutes.

Most of the cases of "irritable bladder," "neuralgia of the bladder," etc., come under this head.

The diagnosis is easily cleared up by direct inspection of the bladder. The trigonum is intensely congested, sensitive, and in some cases the swelling of the mucous membrane is very marked.

The treatment must be directed to the cause, if possible. Rest, diluents, flaxseed tea, citrate of potash, etc., are indicated. It is necessary to emphasize the importance of an exact diagnosis before undertaking the treatment of any case.

It is well to bear in mind that in some instances of so-called rheumatic or gouty affections of the shoulder-joint the pain and disability are chiefly attributable to an inflammation of the subdeltoid bursa. This of itself may cause such active phenomena as to lead one to suspect osteomyelitis.

As jaundice is rarely present in acute inflammation of the gallbladder and the pain often extends to the appendiceal region, there is always a chance of its being mistaken for appendicitis.—*Inter. Jour. of Surgery.*

¹Paul Pilcher, M. D., *Med. Record*, May 23, 1908, p. 856.

TREATMENT.

The Treatment of Cystitis¹.— In the treatment of all cases of cystitis, the removal of the underlying cause, according to Pilcher, is of primary importance; we cannot expect to have a permanent recovery from cystitis if the urethra still remains infected, if the kidney is still the site of pyelitis, if the enlarged prostate still obstructs the efflux of the urine. In the acute cases, from whatever cause, bladder irrigation is contraindicated except in the declining stage of a gonorrheal cystitis. Rest in bed, with the hips elevated, will often give considerable relief from the strangury and the constant desire to urinate; by elevating the hips the water which accumulates in the bladder flows away from the trigonum, which is the most congested and acutely sensitive portion of the bladder. Opium and belladonna may be given in suppositories to control the pain. Heat to the perineum and above the pubis, and hot sitz baths, will greatly relieve the tenesmus, and to some extent lessen the congestion of the bladder mucous membrane. Diluent drinks should be freely given; if the urine is highly acid, mixtures containing potassium citrate and hyoscyamus will render the urine less irritating; hot rectal enemata are also indicated. Since the introduction of urotropin (and allied drugs) there has been considerable discussion as to its usefulness; when administered by the mouth, urotropin is broken up into ammonia and formaldehyde gas, which latter is liberated as such in the urine. Dudgeon (*Lancet*, June 20, 1906, page 159) claims that this drug can not be given in large enough doses to have any marked antiseptic effect in the bladder, but the clinical evidence does not substantiate his objections. However, in our enthusiasm over a drug which has helped in some cases, the tendency is often to forget the agents which were formerly used, and which materially aid in the treatment of these cases; infusion of linseed, buchu, and triticum repens are often of value in acute cases. In the subacute stage, the oil of sandalwood, cubebs, and copaiba

are most useful, but should not be employed for more than a few days at a time. In many cases, salol in doses of from $\frac{1}{2}$ to 1 dram a day is more effective than urotropin.

In chronic cases, the treatment may be divided into the nonoperative and the operative treatment.

Some patients may be benefited by the use of drugs, rest in bed, and regulation of the diet, but in most cases, regular catheterism, irrigation of the bladder, and the use of some of the silver salts or of iodoform emulsion are called for. In the gonorrheal cases, oil of sandalwood or oil of copaiba, combined with salol, and given in capsules, is of great benefit.

The object of washing out the bladder is primarily to cleanse the mucous membrane, and to remove the bacteria, mucus and other detritus which are present in the bladder and are constantly irritating its mucous surface; in order to accomplish this, warm sterile water is sufficient. It is not always necessary to introduce the catheter in order to irrigate the bladder, but in order to do it thoroughly it is best to use a catheter of large size, or an evacuating silver catheter; as soon as the liquid returns clear, the irrigation may be stopped.

Solutions of silver nitrate ($\frac{1}{2}$ of 1 per cent.), argyrol (20 to 50 per cent.), and iodoform emulsion have been found most useful. The method of using these solutions is as follows: After irrigating the bladder until the liquid returns clear, 2 ounces of $\frac{1}{2}$ per cent. solution of silver nitrate is injected into the bladder and the catheter removed; the patient is to retain this solution for twenty minutes, if possible, and then pass it voluntarily. The argyrol and iodoform emulsion are used in smaller amounts, but in the same way. The instillations may be repeated every two or three days.

Direct application is by far the most efficient method of dealing with chronic cystitis. It is not applicable in the male, but can be done in the female with the patient in the knee-chest posture, and through a vesical speculum. The application is made with the mucous membrane in plain sight; for this, stronger solutions of silver nitrate may be used, and where ulcers are present they may be cauterized by the sil-

¹ Paul Pilcher, M. D., *Med. Record*, May 23, 1908, p. 838.

ver stick, or, if preferable, by carbolic acid or the actual cautery.

Surgical Treatment.—Some cases of chronic cystitis resist all of the ordinary methods of treatment; the patients are worn out by their suffering and are willing to subject themselves to any form of treatment that promises relief. In the case of cystocele and prolapse of the uterus, surgical intervention with the correction of these deformities will lay the foundation for the relief of the existing inflammation of the bladder. In cases of contracted bladder with thickened walls and an old chronic cystitis, the establishment of a vesicovaginal fistula will result in recovery after all other methods have failed.

DIETETICS AND HYGIENE.

The Dietetic Treatment of Chronic Catarrhal Gastritis.¹—The dietetic treatment of this disease is more important than giving drugs, according to Morgan. When we remember the large chapter of conditions or causes to which "dietetic errors" opens the pages, we can appreciate the force of this statement.

Regularity in time of eating should be insisted upon in every case.

There should be a clear knowledge of the amount of food to be taken at a given time. It is not sufficient to roughly outline this fact, but explicit statement must be made. It is not sufficient to tell our patient to stop eating just before hunger is appeased or when the stomach commences to feel full; we should remember that the motor function of the stomach is likely impaired, and we must guard against overloading it.

"What is good for the eyes is oftentimes not good for the stomach," is a true saying, and this seems to be particularly true in chronic catarrhal gastritis, even though the sight of tempting food, as a rule, acts as a stimulus to the secretion of gastric juice.

A patient may be unable to eat breakfast for some time after arising in the morning. If there is no particular desire for food the

morning meal should always be light in character and amount. If, however, the stomach wakens with the other parts of the body, there is no reason why a moderate or full meal may not be taken at this time.

Due attention should be paid to the condition of the teeth. If any cavities exist, they should be filled. If many teeth are lacking, false ones should be supplied for the purpose of tearing or grinding, as the case may be.

Ideally considered, the patient should drop all thought of business when partaking of any meal. Many professional men, especially physicians, err on this point. The late Dr. William Pepper was said to have had his meals served to him while seeing patients in his office. The great tendency with Americans today is to carry business affairs to the lunch table, and while they may save time for the present, they surely are borrowing from the future.

Certain single articles of food may be easily assimilated, such as oysters, stewed or panned. Ice cream, when taken alone, may also be well assimilated.

The combination of certain foods, as oysters, shell fish, and ice cream oftentimes will precipitate a violent acute exacerbation of a chronic gastritis. Forcheimer well says: "In the diet, consideration should be paid to the subjective symptoms of the patient. When there is constipation prescribe milk, cream, fats; when there is diarrhoea, cocoa, eggs, meat; when there is flatulence, as few carbohydrates as possible. The articles of food should be chosen so as to recognize the likes and dislikes of the patient, and, as far as possible, to profit by his experience as to their digestibility in his particular case."

The character of food taken depends upon the power of the stomach to perform its work. If the motor power is much diminished, then all meals must be small in amount, but repeated at more frequent intervals than usual. If proteid digestion is deficient, the amount of solids taken must be lessened and they must be ingested in the best possible condition for assimilation.

If there is much mucus present it must be gotten rid of before attempting to partake of food. This is best accomplished by sipping one or two glassfuls of a hot alkaline water, such as normal saline. If this does not suffice, lavage must be resorted to.

¹ A. C. Morgan, M. D., Philadelphia Monthly Encyclopedia, June, p. 300.

Hot breads should not be taken, as they irritate the mucus membrane, and also favor fermentative processes by inhibiting gastric functions and causing food to remain in the stomach beyond the normal time.

The daily amount of liquids required for the body needs should be less than three quarts daily. More than this may be harmful. Milk either plain, alkalized or partly digested, as in kefir or kumyss, should always be tried, as it represents a perfect food in itself.

We should avoid all highly acid and spiced foods, as by their irritating qualities mucus in excessive amounts may be poured out.

Vegetables, well cooked and in moderation, are permitted as a rule, with the exception of those which cause flatulence, such as cauliflower, lima beans, etc.

LITERARY NOTES.

The great and growing importance of the subject of school hygiene led sometime ago to the organization of the American School Hygiene Association. To further the objects of the Association a journal has now been established under the name *School Hygiene*. The first number is before us and is most creditable. It represents an earnest capable effort to place before the public a report of progress in the movement to secure improved school conditions for children and to awaken public interest in the importance of the subject. Such improved conditions are only to be obtained by widespread public sentiment acting upon the legislative bodies of states, cities, and towns; for the public makes the laws and the public provides the money, and progress cannot be made beyond the point to which the public is educated. The problem of securing improved school conditions becomes, therefore, the problem of the education of the public, and however enthusiastic a small body of interested persons may become, and however thoroughly they may be convinced of the primary importance of this matter, they must wait upon the action of these legislative bodies, which are in turn acted upon by public sentiment.

School Hygiene, therefore, stands for an attempt made to meet the conditions

as described and to call the attention of as many persons as may be reached to the existing school conditions in this country, to the methods of remedying these conditions by legislation and otherwise, to the progress already made in improving them, to the results obtained by improved conditions, and to methods and results obtained in other communities than ours. The movement in behalf of school hygiene is not to be regarded as an original experiment being conducted by the American people, for most European countries are far ahead of us in the matter, and their experience and results reaching over many years are of great importance to us, and the avowed object of *School Hygiene* will be to present those methods and results.

We strongly commend this publication and wish it the success its objects and character so richly deserve.

NOTES ON MODERN PHARMACEUTICAL REMEDIES.

"The medical profession assuredly has a right to demand of the pharmaceutical manufacturer that he shall make good his claims concerning the superiority of his products in the matter of quality, purity, uniformity and pharmaceutical skill; that he shall be honest and frank with the medical profession in regard to the quantities or proportions of the active or potent ingredients in definite doses; and that his literature and published statements shall be free from misrepresentations, unwarranted claims, and everything calculated to mislead or deceive.

On the other hand the medical profession owes it to right, justice and honest progress not to arbitrarily reject any legitimate product without a fair open above board investigation; and to never condemn nor stigmatize any pharmaceutical manufacturer on the un-American basis that a person is guilty until proven innocent."—*American Medicine*, Jan., 1908, p. 54.

"The physician is entitled to know the character, source, action, incompatibles, uses and contra-indications of modern pharmaceuticals, and to get that information from sources not interested in their manufacture, sale or exploitation. The descriptions which follow are absolutely unprejudiced, and to the best of our knowledge true statements of fact."—*American Medicine*, May, 1908, p. 243.

(Continued.)

ICHTHYOL.

Description—Ichthyol is a dark brown, thick liquid having a decided bituminous

odor and taste. It is a composite substance consisting largely of the sulphonic acid compounds of ammonia. It is obtained by a process of distillation from the tar of a bituminous deposit, found near Seefeld, in the Austrian Tyrol, rich in fossil fishes. Its chemical character is very complex and as yet undefined. Ichthyol is readily miscible with glycerine and oils, and soluble in water. It is not soluble in alcohol or ether, except when these liquids are mixed in equal volumes. Ichthyol is rich in sulphur and as used contains from 15 to 17 per cent.

Action—Ichthyol is antiseptic and alterative. It is absorbed by the unbroken skin and exerts a local sedative action. On mucous membranes it is soothing and healing.

Uses—Ichthyol is recommended and widely employed in skin diseases, both acute and chronic, burns, erysipelas, scarlet fever, etc., in all forms of vaginal and uterine inflammation, rectal diseases, and internally in tuberculosis, some forms of nephritis and hereditary syphilis. In gonorrhea, particularly of the female, it has been found exceedingly useful.

Dosage—*Internally*, 5 to 30 minims (0.2 to 2 cc) in simple aromatic solutions, or preferably in capsules. *Locally* it may be used in 3 per cent. solutions to full strength. May be applied on tampons or in suppositories in vaginal or rectal work.

Incompatibles—Ichthyol is incompatible with acids, fixed alkalies, the carbonates, mercurials and iodides, the alkaloidal salts and saline solutions in general.

Special Considerations—Ichthyol has the advantage of being absorbed by the unbroken skin.

Bibliography—The literature on Ichthyol is too extensive to permit of tabulation in this description.

Manufacturers—The Ichthyol Company, Hamburg, Germany (Merck & Co., New York, American Agents).

ANTIPHLOGISTINE.

Description—Antiphlogistine is a soft, semi-solid paste of grayish color, and the odor of wintergreen. It is free from toxic or irritating ingredients.

Formula—Antiphlogistine is composed of glycerine (C. P.) boric acid, salicylic

acid, iron carbonate, peppermint, gaultheria, eucalyptus and iodine, combined with the base, dehydrated silicate of alumina and magnesia.

Action—Antiphlogistine is an aseptic and antiseptic hygroscopic poultice. Applied to inflammatory areas it greatly augments physiological hyperemia, and thus promotes local lymphatic and circulatory drainage of waste and toxic products. It is promptly anodyne and analgesic. When infection has taken place and pus is forming, the hyperemia induced by a hot dressing of Antiphlogistine together with its marked hygroscopic effect hastens the localization of the abscess.

Uses—Antiphlogistine is recommended in the treatment of all forms of local inflammation, such as abscesses, boils, carbuncles and all injuries attended by infection. Also as an anodyne dressing in sprains, strains, dysmenorrhea, intestinal disorders, non-surgical abdominal diseases and rheumatic affections. It is widely employed as an adjunct in the treatment of pneumonia, bronchitis and pleurisy. Its hygroscopic action has led to its use for vaginal tamponade. It is also used by dental surgeons in the treatment of inflammatory conditions of the alveolar processes and the antrum.

Method of Application—Antiphlogistine should always if possible be applied as hot as can be borne over the affected part. When a thick layer of ample size has been spread this should be covered by a fairly thick pad of absorbent cotton or wool, and the whole suitably bandaged. The dressing should be renewed in 12 to 24 hours depending on conditions presenting.

Special Considerations—The quality of its ingredients, the care employed in its manufacture, its asepticity and its uniform character and action are the advantages claimed for this product.

References—W. F. Radue, M. D., "Diseases of Children," p. 105, etc.; Leonard Williams, M. D., M. R. C. P., "Minor Maladies and Their Treatment," p. 154; W. A. N. Dorland, M. D., Am. Jour. Obstetrics; L. G. Le Beuf, M. D., New Orleans Med. & Surg. Jour., Aug. '05; H. G. Piffard, M. D., Jour. of Cutaneous Diseases; J. Bonnefin, M. R. C. S.; S. R. Schofield, M. B. Lond., M. R. C. S. Eng. London Lancet, Sept. 23, 1905; A. Lubbert, M. D., Imperial German Army, Therapeutische Monatsschrift, Berlin, Nov. 1907; Finley Ellingwood, A. M., M. D., "The Treatment of Disease," Vol. I, pp. 150-329, Vol. II, pp. 155, 163, 254; W. W. Keen, M. D., System of Surgery, Vol. 3, p. 408; Heart

Disease and Thoracic Aneurysm, by F. J. Poyn-ton, M. D., F. R. C. P., London, Assistant Physi-cian to University College Hospital, etc., p. 119; Text Book of Clinical Medicine, by Clar-ence Bartlett, M. D., Professor of Medicine in the Hahnemann Med. Coll., Philadelphia, pp. 56, 495, 552, 596.

Manufacturers—The Denver Chem. Manufacturing Co., New York City, N. Y.

ESSENCE OF PEPSINE.

(Fairchild)

Description.—A clear, amber colored so-lution, mildly aromatic in taste and odor.

Formula.—This preparation is an extract of gastric juice, obtained directly from the peptic glands of the fresh stomach. It con-tains the known enzymes—the milk-curdling and proteolytic ferments, and in their nat-ural association with the soluble con-stituents of the gastric cells. It contains 18.5% of alcohol by volume.

Action.—Essence of Pepsine (Fairchild) has the characteristic action of the gastric ferments, i. e. the coagulation of casein and the conversion of proteids into peptones.

Uses.—This product is recommended in disorders of gastric digestion, both in adults and infants. It is particularly available and reliable for the production of whey and junket from fresh milk. The junket so pre-pared is often found useful as a vehicle for iodides, salicylates, etc. This extract of gastric juice has proved serviceable in the administration of remedies which, as or-dinarily used, are ill borne and cause dis-turbance of digestion. By employing Es-sence of Pepsine (Fairchild) as a vehicle very large doses of drugs such as potassium iodide have readily been administered for continuous periods.

Dosage.—1 to 4 drams (4 to 16 cc.)

Special Consideration.—Essence of Pep-sine, (Fairchild) is a concentrated extract of gastric juice; it differs from ordinary wines and essences of pepsin in the fact that it is not prepared from any dry, or pre-cipitated, or any form of pepsin separated by chemical means; and the manufacturers have always attributed special importance to this fact—that it is a real gastric juice ex-tract, of a rigidly standardized character, sterile, agreeable and permanent.

Manufacturers.—Fairchild Brothers & Foster, New York.

NEWS ITEMS.

New Hampshire Medical Society.—The newly elected officers for the ensuing year are Drs. John M. Gile, Hanover, President; Frank Blais-dell, Goffstown, Vice-President; D. E. Sullivan, Concord, Secretary; D. M. Currier, Newport, Treasurer; William T. Smith, Hanover, Dele-gate to American Medical Association, with F. A. Stillings, Concord, Alternate; A. H. Harri-man, Councillor, Belknap County; M. S. Wood-man, Councillor, Grafton County.

American Pediatric Society.—At the annual meeting of the American Pediatric Society, held at the Delaware Water Gap, May 25 and 26, the following officers were elected: President, Chas. P. Putnam, Boston; Vice-President, Isaac A. Abt, Chicago; Second Vice-President, T. S. Southworth, New York; Secretary, Samuel S. Adams, Washington, D. C.; Recorder, L. E. La Fetra, New York; Treasurer, J. Park West, Bel-laire, Ohio; Member of Council, Alfred Hand, Jr., Philadelphia; Delegate to the Congress, A. Jacobi, New York, Alternate J. P. Crozer Griffith, Philadelphia. The next place of meet-ing will be at Lenox, Mass.

Routes to and from the Pan-American Congress at Guatemala, August 5th to 10th, 1908.—New York by train to New Orleans, thence by United Fruit Company Steamer to Puerto Barrios on the Gulf; thence by train to Guatemala City—\$56, plus price of food and sleeper on train to New Orleans. Time—seven days.

From the Middle West, the rates and time will be about the same as above.

Steamers leave New Orleans for Puerto Barrios, Thursday mornings at 10 o'clock.

From San Francisco by boat to San Jose; thence by train to Guatemala City—\$76.50. Time—eleven days.

Return Trips.—By the same routes and at the same expense as above.

Other Ways of Return to the East and Mid-dle West:

By train from Guatemala City to San Jose; thence by boat to Salina Cruz, a Mexican and Pacific port; thence overland to City of Mexico. Cost—\$53.

From City of Mexico to New York entirely by rail, including berth—\$80. Total cost from Guatemala City to New York City—\$133. Prob-ably the same to the Middle West.

From City of Mexico to Vera Cruz—\$10, thence by Ward Line Steamers to New York, stopping at Yucatan and Cuba—\$60. Total cost from Guatemala City to New York City—\$123.

Hotels at Guatemala—\$2 and \$4 a day.

The Capitol at Guatemala is situated on a plateau, one mile above sea level. August is the time of year known as the "cunícula," when there is no rain and the heat is not as great as in our own Southern States.

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AUGUST, 1908.

\$1.00 Yearly
In Advance.

Names, please?—A card is being widely circulated in Brooklyn on one side of which appears the following:

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It is often a great hardship for many persons with large families who honestly try to pay their obligations to provide for the necessary attendance of some physician during illness, and many such cases are therefore neglected until they become very ill, or even beyond the help of any physician.

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Remember one day's sickness in your family will cost you *more* than a *year's* membership in this company.

This plan is *not* a charity, but is conducted on *strictly business principles*.

Remember *One Dollar* yearly includes your *entire family* regardless of size.

The best service, *courteous* treatment and *attentive care* are assured.

Join now, *delay* may be *expensive*.

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Who are the "best physicians" engaged in this form of practice? Can it be that there are any in Brooklyn who are so prostituting their profession?

It is beyond comprehension that any decent, reputable physician would lend his support and skill to such an enterprise.

It is not only the most reprehensible form of quackery, according to the best tenets of the medical profession, but it has another side which the patrons will doubtless soon find out for themselves.

"Pure medicines will be furnished at a cost of only 25 cents for each prescription." This is the dusky gentleman lurking in the wood pile, and no one can fail to see the beautiful possibilities. It only remains to find out how many prescriptions at 25 cents per, the "hired men" of this "Medical Service Company" can write daily, to calculate the profits.

It might be a good plan for the County Society to investigate this matter and give its findings the fullest publicity. Good things deserve pushing along. But first of all, names, please?

Pure food and drug laws should have the earnest approval and support of all good citizens. Opposition to them cannot fail to suggest motives, questionable to say the least. But when rulings under such laws are dependent on interpretations open to controversy, even the most zealous believer in the necessity for legislative restrictions will admit the desirability of conservatism and temperate judgment. The present National Pure Food Law is, all in all, a splendid one. Every person who was concerned in its evolution and enactment deserves commendation. As it stands it is impossible to see a single feature that can be laid to sinister motives.

But like all laws it had to be construed, and here most unfortunately arose dangers second only in harmful possibilities to the evils the law was designed to correct. The situation called for dignity, fairness and a comprehension that could grasp all possible sides of presenting questions. That suspicion, arbitrary opinions and impolitic methods were allowed full sway for too long a time must now be admitted by all who saw only the splendid possibilities of the law under rightful interpretation. Fortunately for all concerned, President Roosevelt with the keenness that characterizes the man, recognized the dangers and a short time ago appointed a commission of prominent chemists to investigate and report on controversial matters.

When their report is published we hope and trust it may bear out Dr. Wiley's contentions. We are not of those who wish to see Dr. Wiley overruled and humiliated. We anticipate another and greater gain, which will come from the deliberate,

dignified methods the new Commission will employ and the confidence that will be created in opinions thus evolved. It is at the same time deplorable that an official in whom so much power was vested as in Dr. Wiley could not have risen to the opportunity and by his very broadness and sound judgment created a profound respect not only for the law but for himself.

The lesson is obvious. Demagogic methods do not foster confidence nor respect and the best of all preservatives for official reputations are common sense and tact.

The cure of therapeutic ills as Sollmann (*Jour. A. M. A., June 27, 1908*) well says, does not lie in limiting prescribing to the Pharmacopeia or the National Formulary. Used intelligently the Pharmacopeia certainly has a utility that will commend it to scientific men. Its place in medicine is beyond controversy. Therefore it is to be hoped for the sake of greater therapeutic solidity and accuracy that medical men will cultivate a closer acquaintance with this valuable book. As for the National Formulary few will be deceived as to its real character or purpose. Created by the druggists, "he who runs may read" that it is solely for the benefit of druggists. All the protestation in the world that it was designed to elevate the ethics of prescribing will not obscure the fact that it is primarily and fundamentally a manual of substitution. Any physician who prefers to use substitutes and have them prepared by Tom, Dick or Harry, from indifferent or necessarily variable drugs will find the National Formulary a mine of information. But few physicians are so easily hoodwinked. Their common sense will tell them that if

a proprietary is baneful or useless its substitute will be no better, and by the same token, if a substitute is valuable and useful, the original, with its added feature of commercial responsibility, will be a hundred times preferable.

Let us correct the abuses of the pharmaceutical industry, but in trying to side-step the evils, let us not "jump out of the frying pan into the fire." To resort to exclusive National Formulary prescribing would scorch us all. The average druggist, as Dittman (*Kentucky State Med. Jnl., Aug., 1908*) so truthfully says, is really incapable of compounding the National Formulary products.

Consequently the wise, prudent physician is not going to forsake once and for all the honest pharmaceuticals that have seemed to serve him well in the past, just because the evils that he ought to have recognized long ago, are just now being exposed, any more than he is going to give up all of his insurance—fire, life and accident,—just because the shady methods of a few companies have been given publicity. No, he is going to exercise a good deal more judgment in selecting the remedies he uses as well as the insurance he buys, but he is not going to deny himself whatever good there is in both.

Discretion and intelligence are going to decide the matter hereafter, for no honest physician can fail to admit that he has been careless and not a little to blame in helping to create the evils men now decry. The immediate future promises much, but the benefits will all fall to those who can "abhor that which is evil," but at the same time "cleave to that which is good."

The contradictions of the dietetists constitute a medical scandal as bad as that of the alcohol writers. There does not seem to be anything upon which the "experts" are unanimous. Even in the feeding of the sick—a most vital matter one would presume—there is a wide diversity of opinion in almost every disease. As they all claim good results, there is ground for a suspicion that it is a very minor matter after all, provided the patient is not fed on the few things proved to be indigestible even to one in health. As for advice for the healthy, it is becoming so chaotic that the layman is almost justified in eating what he pleases, when he pleases and how he pleases. Whatever he does he is sure to find some "authority" in justification, in the tremendous dogmatic literature on the subject. It is a matter which the younger generation of physicians should place upon a scientific basis. They could do this by rejecting all the older opinions and making a new foundation of observed facts.

A denunciation of food fads has been made by Sir James Crichton Browne, in his annual address as President of the Sanitary Inspectors' Association in England, and the world owes him a vote of thanks for his timely warning. He mentioned the fact that it has been found that there is a semi-starvation among large classes of every nation, and that it is the cause of the physical and mental degeneration we find among these poor people. Yet curiously enough he shows that all new fads, follies and fallacies are in the nature of deprivation tending to increase the ills from which society suffers. "Over-eating" is the modern shibboleth and it sounds

strange to people who scarcely know where the next meal is to come from. Sir James particularly denounced vegetarians and lauded the virtues of mutton chops and sirloin of beef.

It is quite likely that public health would be immensely better if the whole clan of dietetists were muzzled, and the public would listen to Sir James' wholesome advice, which he quotes from Byron and the Bible: "Take the gifts the Gods provide thee."—"Nothing is common or unclean." It will take the science of dietetics a long time to outlive the odium into which it has fallen as a result of the present fad of the foolish.

Honesty and Publicity in the Export Trade.—It is now acknowledged that under the present improved system, the word "American" is practically a guarantee of the wholesomeness of meats. We wish it were a guarantee of honesty and safety in the case of every other food export—indeed of every thing from America. It will be a gold mine of profit to American exporters if they will only let the public know that goods are safe and exactly what the label says. The demand will be enormous, for we can well see that considerations of public health are bound to become more and more vital as populations become more dense. The French have permitted so much fraud in their export trade, particularly of wines, that everyone now looks on a French label with contempt, and as a result there is a political upheaval from the protests of the real wine growers whose trade has been ruined. California is now suffering because she dishonestly sold her wines under French names instead of building up her

own trade reputation. Honesty is not only the best policy—it is the only one permissible.

Horse and dog meat as food have become so common in Europe that the matter deserves much more medical attention than has been given to it. Those populations have long been so congested that the lands cannot support them. The whole northwestern part of Europe imports foods from the rest of the world, chiefly from America and Australia. It is to be expected that importations of the ordinary food animals would be insufficient, and that the necessity for nitrogen would drive the people to the use of other animals. It is said that close to one hundred thousand horses and some thousand or two of dogs are eaten in Prussia alone. Under such conditions it is unscientific to use their dietaries as a basis for conclusions as to the proper nitrogen diet, and highly improper to claim they are overfed.

Such stresses mean nitrogen starvation and nothing else. We must beware of physiologists who base conclusions on European dietaries.

Neurasthenia of locomotive engineers is a matter which deserves more attention than has been given to it in the enormous literature bearing upon the recent epidemic of railroad wrecks. Much has been said of the fatigue of overworked employees who are too tired to do their tasks and who in a moment of "waking sleep" fail to see a danger signal. One disastrous wreck with 43 deaths and 63 injured is said to have been caused by an engineer who had been on duty forty hours. We hope the report is false, for the

manager or superintendent who ordered him to this duty should be in prison. There is no use in mincing words any longer on the subject of acute fatigue, but the matter of chronic fatigue now needs more than vigorous words. It is well known that the most severe engine duty—that of the flyers—cannot be endured more than a few years. Some of the men break after four years of it or even less occasionally, so rumor states. The facts should be known, because it is a condition of neurasthenia which wholly unfits the sufferer for duty in which a slight defect of judgment is fatal to himself and scores of others. There is a suspicion that all passenger engineers become more or less affected except those who have never had fast runs. As far as known, the slow freights do not cause such an unwholesome strain.

There is Need of Frequent Examinations of Engineers.—It is a most disquieting thought that we cannot board a fast train without the risk of placing our lives in the hands of a man in the early stages of nervous breakdown. Our railroad surgeons might find a new field of activity if they have not already worked it. If it is good business to keep liquor from the engineers and employ none but abstainers, it is better business to see that there are no worse causes of defective judgment, and we know nothing worse than the too frequent neurasthenia of which we have recently heard. Only the most vigorous can pass the physical examination for enginemen, but no human being can long stand the strains of engine-driving, and it is said that they do break down in the most sudden fashion, not only from

nerve exhaustion, but from organic diseases due to the cumulative effect of the millions of tiny traumatisms of the jarring, shaking, jolting engine. It does seem that the machinery of modern civilization has developed beyond the point where it can be managed, and the operators can be trusted only in the few years of highest physical efficiency.

Overwork of school children is much more serious than we have previously been led to believe, if the reports from Germany are correct. It is said that Professor Eulenberg has investigated over a thousand cases of suicide in children and finds that more than half are due to overwork and failure to pass examinations. This is dreadful. Our pedagogs once had a mania for copying German methods, and some may still be afflicted. They can adopt things without the slightest idea of the original purpose. The kindergarten, for instance, was a mere playhouse where the children of working women could be guarded in work hours, yet we have actually made it a school, as though tots of four could be "educated" when their brains haven't even grown. American mothers insist upon sending their babies to school to get rid of them. Society is becoming so socialistic that it must play the nurse—or child-guard. The school boards must accept the new nursing duty, and stop the attempt to educate the babies. Above all else, must we repudiate the dreadful German forcing system which renders the poor little sufferers so neurasthenic that it even leads to suicide? The school children of less than 12 or even 14 who every day are carrying home a pile of books are being criminally treated. From

3.00 p. m. until an early bed hour, is play time—or chore time if necessary—and to strain the nervous tissue by studying at that period is merely injuring it.

The school duties of physicians are now self evident. If they become public spirited enough to do this duty they should seek and obtain possession of school boards and force out the shop keepers who know little or nothing of the damage they do to their own children. We have repeatedly called attention to the manner in which American physicians neglect public duties which everyone must shoulder, and it is high time that they be as faithful and energetic as those abroad. European doctors are very numerous in all spheres from cabinet positions down to village supervisors—but here we are above being democratic. No wonder we receive no public rewards—we cannot be rewarded for what we do not accomplish. Let there be a beginning in reforming the school system so that it never injures one little frail body which really ought to be out of doors all day instead of being forced to sit on a hard bench until its poor little back nearly breaks.

The criminal neglect of children by Eddy-ites has reached a point which requires legal restraint. The cases are becoming quite numerous in which it is shown that the patients would have lived had they received a trifle of medical care, not to speak of common humanity. It is proposed to make such criminal negligence a felony, but it is not quite clear why existing laws are not sufficient to punish such inhumanity. There is a sort of pity for the Christian Scientist who dies as a

result of his own delusion, but when he carries his absurdity to the point of destroying others, it raises the question as to whether courts are not justified in removing children from his legal control as unsafe to be trusted in his state of mental fogginess and exaltation. The conviction and confinement of such a father in New York City was a splendid beginning, but this punishment was too mild, although it “cured” him of his Christian Science delusion. Another conviction in North Carolina was injured by a recommendation for clemency.

The increasing use of cocaine is a matter of much concern to publicists as well as physicians. The attacks made upon the traffic have driven it to underground channels and now the Post Office Department has discovered that the mails are being used to an extent which is appalling. Not only do peddlers carry it throughout the South for sale to negroes who are the chief buyers, but quack remedies whose only ingredient is cocaine, are being distributed wholesale. This is disreputable and in time is apt to place the drug trade in as unfortunate a position as the brewers now find themselves on account of the dreadful manner in which many of them established and maintained the lowest kind of grogeries. In self preservation, the brewers are moving towards the abolition of the low saloon, as they fear a prohibition which will not stop at local option, but include interstate commerce. It is now proposed to exclude cocaine from the mails, but before the scandal goes too far would it not be wise for the dealers in cocaine to organize some plan whereby this highly essential drug will not be sold into wrong channels for wrong purposes?

ORIGINAL ARTICLES.

THE RESPONSIBILITY OF THE PHYSICIAN FOR THE FUTURE OF THE CHILD WITH ADENOIDS AND IMPAIRED HEARING.

BY

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With the knowledge that certain abnormal changes in the upper air passages exert more than a mere local influence and play an active role in retarding both physical and mental development, it is assuming a responsibility that can hardly be estimated, for any individual to state that such conditions will be outgrown and disappear later in life. The conditions to which I would refer in this aspect, are two in number, namely, the so-called adenoids, and more or less impairment of hearing. In both these, whether alone or associated, and the latter is frequent, the physician who neglects the child so affected, is in many instances responsible for the development of a weakling, who as he grows into manhood, is seriously handicapped in the struggle for existence.

The presence of lymphoid tissue at the base of the skull and in close relation to the posterior orifices of the nasal cavities, is perfectly normal and does not necessarily indicate that it is doing harm, or should be removed, but when this growth for any reason interferes with nasal respiration, or by its location, prevents proper ventilation of the middle ear, a train of physical and mental consequences ensue, that at an early stage are readily prevented, but later in life are irremediable. The child with well developed adenoids sufficient to cause nasal obstruction, is not only frequently allowed

to go through early life suffering extreme discomfort, but at the same time consequences of serious import are developing, which in turn add to the original source of the trouble.

As both the bony and muscular development of the upper jaw and face are dependent as regards symmetry and contour, upon unimpaired nasal breathing, it can readily be seen that interference with this function for a long period of time, will result in alterations of this character, as shown by the pinched nares, the broad base and diminished size of the nasal capacity. The lack of muscular development controlling the nasal orifices, often accounts for the failure to obtain nasal respiration after late removal of the adenoids, as the poorly developed muscles cannot act as dilators of the nares and consequently the tissues draw in like a valve during inspiration, thus keeping up the mouth breathing.

When the nasal obstruction has existed for several years, the arch of the superior maxilla is frequently deformed; the teeth are crowded together, projecting and irregular, and the protrusion of the upper lip aids in the production of the peculiar facial expression that at times resembles the dull facies of the mentally defective. Of course this is only seen in well marked instances of nasal obstruction, but it is frequent, and the responsibility of the physician in such cases does not rest with the recognition and removal of the offending growths, but the mouth breathing habit must be overcome, the impaired general health of the child restored and in connection with the orthodontist, the teeth must be regulated; otherwise the removal of the adenoids alone, will count for little.

¹Read before the North Branch of the Philadelphia County Medical Society, June 19th, 1908.

Obstruction also means irritation of the soft tissues lining the nasal chambers, the pharynx and larynx, and as a result, chronic rhinitis is practically present in all cases, while the child repeatedly takes fresh colds, which are but acute exacerbations of the pre-existing inflammation. Repeated attacks of coryza are a frequent symptom of adenoids, especially when they are not sufficient to markedly obstruct nasal breathing. Consequently in many instances the adenoids are not recognized, as this may be the only evidence of their presence. In addition to the tendency to attacks of coryza, a spasmodic cough may be a prominent feature of the laryngeal irritation dependent upon mouth breathing and it often permanently disappears after the adenoids have been removed.

In another group of cases, the responsibility of the physician is not at an end when he eliminates adenoids because the child gives no evidence of mouth breathing when examined, as not infrequently fair nasal respiration is carried on during the day, but at night in the recumbent position, mouth breathing is alone practicable; the child is restless and there is unaccountable ill health with more or less anemia. Such tired, irritable and often ill tempered children, not responding to general treatment, improve in a remarkable manner after the adenoids have been removed and with the rapid restoration to perfect health, the cause of the general disturbance of nutrition becomes apparent.

Where there is marked nasal obstruction and the child has been neglected either by the physician, or its parents, the peculiar nasal voice alone is of some importance in handicapping its future career and when

there is added to this, the ill development so often seen, with difficult breathing becoming exaggerated during eating and the constant open mouth with the hanging lower jaw and stupid facies, such a child has a rather heavy road to travel in competition with its more fortunate companions. Frequently in addition, the tonsils are enlarged and add their quota to the discomforts present, while in a certain number of such cases, the cervical glands are found enlarged, not infrequently tubercular in character. A predisposition to infectious diseases is undoubtedly more marked in the child with adenoids than in those normal in this respect for several reasons, the most important being the constant irritation of the respiratory mucous membrane and the defective vitality of the child, especially as regards the impaired general development and insufficient oxygenation.

Another aspect aside from the purely physical, is the dull mentality and inability to concentrate the attention so infrequently observed in many cases and this is often still further increased by impaired hearing, making the child apparently indifferent, when the cause is no fault of its own, but has a definite basis in the nasal obstruction and middle ear changes. Such children are usually backward in school, find it almost impossible to keep up in their studies and are often blamed for carelessness and inattention, when removal of the adenoids with attention to the conditions remaining, will usually eliminate such burdens.

As impaired hearing is so frequently associated with adenoids, the two affections must often be considered together, but at the same time it must be remembered that

they may be independent; adenoids predisposing to impairment of the hearing, but the latter occurring in many cases entirely free from the former.

It is not desired to consider cases of complete abolition of hearing, or deafmutism, but only that large class with impairment of hearing, that to a greater or lesser degree are susceptible of improvement. Such cases usually result from suppuration of the middle ear, less frequently from tubal obstruction and rather infrequently to sclerotic changes in the tympanic cavity. Whether the middle ear is suppurating or not and the presence of pus greatly increases the responsibility of the physician, the impaired hearing warrants most careful consideration, as to allow a child to grow into manhood under such conditions, when the aural trouble can in the majority of cases be corrected, is most reprehensible. Such conditions are progressive, and the future of the child is often seriously marred by the physician not assuming the responsibility that he should. When there is pus in the middle ear, the patient should receive unremitting attention, for as long as suppuration continues, not only is there danger of further impairment of hearing, but the gravity of endocranial complications is constantly augmented with the duration of the purulent inflammation and the increasing age of the individual.

One can well appreciate, that as the child grows into adult age, he is under a marked disadvantage both as regards his business and social relations and as later in life the defective audition has usually become permanent and often does not respond to treatment, it follows that every effort should be made to restore the

hearing at an early age. Often the child with marked deafness is under a constant mental and physical strain as regards his school life and in many instances where the impairment is not recognized, he is considered dull, or indolent and is unjustly punished, when he is not to be blamed. Such a child frequently suffers from insufficient physical exercise as a result of not entering into the sports of other children and he deteriorates both physically and mentally, desiring to be left alone and leading a more or less sedentary life.

It is well known that the child can lose much more of his hearing without it being recognized than can the adult and therefore in many instances it is only when his absentmindedness, or inattention becomes very pronounced, that attention is called to the aural changes. For this reason, it is the duty of the physician to give proper care to such children at an early period, for unless this is done, the hearing may be so seriously impaired, that the individual is far advanced towards deafness before his condition is realized. The younger the child the greater the liability of both parents and physicians to overlook the impaired hearing and in many instances a degree of deafness that would cause deep concern to an adult, entirely escapes observation and is only recognized after it has continued for a long time, or severe pain in the ear directs attention to this organ.

The responsibility of the physician in this respect, is not only limited to the child already afflicted with impaired hearing, but is even greater concerning the prevention of deafness and especially so in certain infectious diseases as scarlet fever and measles. And as so clearly stated by von Troeltsch, many years ago, "it must

be unconditionally affirmed that in all those general diseases in which experience has shown that the ear is frequently or almost always affected, the physician who will not make himself liable to the charge of dereliction of duty, must note the condition of the ears without waiting for the complaints of the patient or the communications of the attendants. By this early attention, much misery and injury will be prevented."

In cases where the hearing is suspected to be impaired, the responsibility of the physician does not end with a single examination if he should find but little change from the normal at that particular time, for there are frequently marked fluctuations in the auditory acuity under varying conditions, so that while at one time the hearing may be apparently normal, the next day for instance, the child will be able to hear but little. Thus the parents will feel secure in the statement of the physician that the hearing is normal, when as a matter of fact, it is becoming progressively impaired and valuable time is being lost.

Whatever the cause of impaired hearing in a child, it remains true that it influences its future in thought, behaviour and being and as the development of the child as regards its mental aspects, is dependent in great part upon the normal condition of its special senses, it can be appreciated that the partial loss of such an important sense as the hearing, must exercise a great influence for harm in this respect.

While many factors are of course concerned in the upbuilding of the healthy child as regards its future, none present greater importance for harm, than those

of mouth breathing and impaired hearing and the responsibility of the physician is not only limited to the recognition and treatment of these conditions in the individual case, but it has a still broader field; that of educating those under whose care the child is placed, of what these conditions mean when neglected and the great benefits that accrue when properly treated.

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SEBORRHEA: ITS RELATION TO ALOPECIA AND ACNE.¹

BY

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Dermatology offers an especially inviting field for pathological investigation because of the fact that the skin is the one great organ of the body open to direct observation. The study of the various pathological conditions that affect the internal organs of the body can be studied only in dead material, where we can see results and not processes, but on the skin we are able to read the story much more fully. We can watch the development macroscopically with the naked eye, and for microscopic research we can much more readily obtain fresh material, and can, before excision, note its relation to the disease as a whole. There is an opportunity to compare clinical appearances and histological details as in few other studies. Such observations moreover by the method of analogy help much in furthering our knowledge of similar processes elsewhere in the body.

In presenting the subject of seborrhea, I am bringing before you one of the commonest disorders of the skin, and one which

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never leads to vital, and perhaps not even to serious consequences, but which, nevertheless, is connected with two of the commonest and most troublesome conditions confronting the general practitioner to-day in his attempt to treat skin diseases. As to the structure and function of the organs affected in seborrhea, the sebaceous gland is found in connection with a hair follicle so that the hair follicle and the gland may be considered as together forming a compound organ. This structure has been called the pilo-sebaceous follicle. It is formed by an invagination of the epidermis, which is pushed down into the deep layers of the corium like the finger of a glove, directed obliquely to the surface, and penetrating the true skin which forms its fibrous envelope. This depression lined with epidermal cells shows a depth proportional to the size of the hair which it contains. About one-third of the way down from the surface the follicle gives off laterally and obliquely a branch, or more often two branches—sometimes even three to six branches—which constitute the sebaceous gland or glands. Where there are no hairs on the skin, as on the palms, the soles, and the dorsal aspect of the terminal phalanges of the fingers and toes there are no sebaceous glands. Exceptions to this rule are found in the red border of the lips, the labia minora and inner surface of the labia majora. The gland shows no lumen, but is filled by a mass of epidermal cells, which, one by one, by a process of fatty degeneration, disappear as they reach the orifice of the hair follicle, and are changed into the sebaceous fluid, a fatty substance which is poured out around the hair upon the surface of the skin. The cellular structure of the sebaceous gland which is apparent at its base, thus disappears toward the point of its communication with

the hair follicle, the cells no longer retaining their cell form but being changed into the secretion of the gland.

These glands opening as they do into the hair follicles, their secretion finds its way to the surface at the mouth of the follicle, passing up along the course of the hair. The secretion itself is then made up of fat, formed by the fatty degeneration of the cells within the gland, together often with cells in the process of degeneration, not yet entirely broken down. The function of this secretion beyond that of furnishing a natural dressing for the hair, is to lubricate the surface of the skin, and prevent too rapid drying of the surface cells and too rapid desquamation.

The disease called seborrhea, which has such far-reaching and apparently diverse results, primarily has its origin in these structures. As to the classification of the various forms of this disease, we find ourselves confronted by considerable difference of opinion. Whether the condition known as pityriasis capitis shall be classified under seborrhea, as is done by some authors, being included under the term seborrhea sicca, or whether it shall be grouped in a separate class under inflammations of the scalp and considered as the preliminary stage of an eczema, is still a disputed point. Pathological investigation fails to show that the sebaceous glands are at all involved, yet it is so common a condition and so liable to be confused with true seborrheic conditions, which it often precedes and accompanies, that a brief discussion as to its symptomatology and the present status of opinion as to its pathology may prove fruitful in clearing up the whole subject.

Pityriasis capitis or dandruff is sympto-

matically characterized by a more or less abundant scaling of the scalp. The hair is dry and unmanageable. The head may itch. The patient is annoyed by the falling of scales upon his clothing. If the disease is at all pronounced, brushing the hair causes a small snow storm of fine white or light gray scales. This condition is very apt to begin at the head of the young boy or girl at the age of ten or eleven years or earlier. There is no complaint of loss of hair at this time; on the contrary, it has seemed to me more often associated with a strong growth of hair. The chief complaint is from the annoyance and apparent uncleanness. At the age of fourteen or fifteen the condition becomes more pronounced and may go on indefinitely without other complication. The disease affects only the more superficial layers of the epidermis, and the deeper layers are not involved.

Pathological research proves that the disease is microbic, and a careful study of its origin and development seems to confirm this. *Tinea versicolor* (chromophytosis) is the one other dermatological condition which seems most closely related to this condition and its microbic origin is beyond dispute. Sabouraud, the famous French dermatologist, in his important work upon desquamating diseases, gives a full account of his method of pathological investigation and of his results which have led to his conclusion, confirmed by other investigators, that the so-called bottle bacillus, first described by Malassez in 1874, and later by Unna, is the one universally present organism in this condition, and in enormous numbers in the superficial layers of the epidermis.

The disease when there is no mixed infection does not produce alopecia, but in view of the fact that in a large number of

cases a mixed infection sooner or later supervenes, it seems extremely probable that pityriasis renders the soil more favorable for the later lesions of seborrhea, and therefore the indication is not only for the relief of the immediate annoyance, but also for the sake of preventing the more serious complications. As the disease is prone to relapse we should not feel too sure of a complete cure but keep a case under extended observation. When one understands that the same remedies which keep this condition under control are those which best serve to prevent and cure the later lesions of seborrhea proper, the indication for treatment becomes all the more urgent and the prognosis as to prevention of a more serious condition becomes the more hopeful.

The disturbance in the fat production shows itself most actively at the age of puberty. It is noticed in many cutaneous diseases, all of which have their age of predilection, or if it does manifest itself at different ages it takes on varying forms in each. At puberty the sebaceous glands take on new and often abnormal activity and as a result we have the primary manifestations of the disease itself and the various secondary conditions, the first of which is juvenile acne, then the pernicious process invades the glands of the scalp and presently the work of depilation begins. Here a new difference in soil aside from that produced by age makes itself manifest, and we find another boundary line laid down by Nature in the difference produced by sex, as men enjoy to a greater extent than women, the sad privilege of baldness.

Two varieties of seborrhea are generally recognized by dermatologists, known as seborrhea oleosa and seborrhea sicca. The

first form is no doubt the fundamental condition and is the one which the word itself indicates. This condition may show itself upon both the smooth and hairy portions of the body. Its characteristic locations are most commonly near the central line which would be drawn to separate the body vertically into two halves. This location is undoubtedly due to some anatomical peculiarity, and in general we are told that the sebaceous glands of these parts near the median line are on an average of larger size than those elsewhere. The chosen sites are the centre of the face, the vertex of the scalp, the inter-mammary region, the median line of the abdomen, the inter-scapular space, the sacral region, and the genital region. From these starting points it may spread over much wider regions. Upon non-hairy parts of the body the disease is characterized by one physical sign, the increase in diameter of the sebaceous pores and by a functional symptom, the over-production of the normal sebum to such an extent as to render shiny and oily the skin of the affected part. Upon the hairy surface this condition is accompanied by a third sign—and this is the diffuse and progressive loss of hair. The disease may be localized upon the scalp alone, but it generally exists here in connection with the same disturbance on the face. In other regions it is not observed, as its manifestations are not sufficiently noticeable to cause annoyance. Upon the scalp, the vertex is most often affected, but it may affect the parietal regions and even the whole scalp. Wherever found we can see a dilatation of the follicular orifices and from such orifices may be seen exuding a tiny drop of oil. The hair glistens, becomes oily, mats together. The reproduction of oil after thorough washing takes place very quickly—in a few hours in bad cases, and

in uncleanly subjects an offensive rancid odor emanates from the scalp.

As to subjective symptoms little or nothing is complained of. Sometimes a sensation of heat or prickling accompanies it. This disease or physiological irregularity may thus be consistent with good health, but it favors skin infections by retaining pathogenic organisms accidentally brought into contact with the surface by the air or otherwise, and so a number of what may be called cutaneous accidents occur which are really the result of cultivated products upon a favorable soil.

The cause of the primary condition itself, this functional overactivity of the glands is a disputed question. The disease derives of recent years a new significance from the researches of Sabouraud, who considers the essential element in seborrhea oleosa to be a specific bacillus, which establishes itself in the hair follicle, being enclosed in the deeper part of a fatty and epidermic cocoon. He finds this micro-organism present in all cases of seborrhea, and in large numbers and he thinks it is the cause both of the sebaceous gland hypertrophy and of the papillary atrophy which constitutes the anatomical lesions of alopecia, both the ordinary senile alopecia and the premature form of alopecia. He also identifies this microbe-containing seborrheal cocoon with the embryo comedo, which later may develop into the acne pustule of which it is the primary and invariable prodromal lesion. These views which are most fully set forth by Sabouraud, and which he substantiates by a detailed, vivid and interesting account of his monumental labors both in clinical study and bacteriological research are set forth in his volume on seborrhea, entitled "*Maladies Seborrhéiques*" published in 1902. His views are so opposed

to those commonly held concerning that historic form of baldness commonly known as senile or coronal baldness, beginning on the vertex, that they seem almost revolutionary. The view held from time immemorial is that this form of baldness is a natural infirmity of middle or late life, a local degenerative change, so common as to be almost normal after the turning point of life, and that it is useless to struggle against it! That it is due to some inherent, and often inherited lack of vitality in the hair papilla which perishes before its time, though the nutrition of the remaining tissues is unimpaired. The theory opens up a set of possibilities which call for serious consideration. The morphology of the bacillus, the means of staining it, the media upon which it can be cultivated and the results of cultivation of the bacillus are all set forth in Sabouraud's treatise in fullest detail, and while the coincidence of the bacillus with atrophy of hair, and hence alopecia, is conceded by other investigators, it yet remains to be demonstrated how far his conclusions as to causal connection between the two phenomena will be found to tally with those of other investigators in the same field. Some of the arguments against the ordinary senile or coronal baldness being the result of microbic action seem to have considerable force, viz.:

1. This form of baldness starts at a definite point, on the vortex, at a point which is the meeting point of the most distal filaments of the nerves supplying the scalp and with the anastomosis of blood capillaries most remote from the heart. But in answer to this it might be said that whatever anatomical condition would here tend to weaken the part would also make it less resistant to the attack of micro-organism.

2. The condition is almost confined to men, while women are for the most part

spared, although they are almost (if not quite) equally subject to recognized parasitic forms of alopecia.

3. This form of baldness seems to be manifested among the educated and well-to-do classes more than among those of the poorer where more chances of infection would naturally be expected on account of lack of cleanliness.

As to the ultimate decision of the question it is as yet altogether too early to give an opinion. Further experiment must be made by means of serum inoculation, attempts to transplant germ colonies, etc., and treatment based upon the microbic theory must be more vigorously pushed and its results reported. Treatment directed to this cause may aid us in determining the real cause. But even if treatment by means of parasitocides fails for a long time to accomplish the desired end, this does not necessarily disprove the theory, for we must remember that the task of the destruction of a living organism within a living organ is not easy. We have to destroy the microbe but preserve the tissues in which it exists.

Aside from the coronal or senile form of alopecia recognized as being commonly accompanied by a seborrhea oleosa, there are other cases of alopecia in connection with this form of seborrhea in which the symptoms are of great severity. Elliott reports cases in which other hairy portions than the scalp have been attacked—the beard and even the pubic hairs have gone on to complete depilation with no symptoms of any further disturbance than a severe type of seborrhea oleosa.

In seborrhea upon the non-hairy skin the appearance is very familiar. The skin is generally yellowish in color, greasy and pasty in appearance, often dirty-looking owing to ready adherence of dust to the sur-

face. In extreme cases the skin acquires a sieve-like appearance and the gland orifices are seen to be blocked with small plugs which are sebaceous filaments described by Sabouraud containing the microbic cocoon, the parent of the acne comedo. These sebaceous plugs can be readily removed. The oily matter is seen exuding in drops and spreading itself over the surface. By pinching the skin between the fingers and thumb the oil can be seen coming out around the plug in the mouth of the follicles. Its favorite situations upon the face are the root of the nose, the nose itself, the inner portion of the cheeks, the chin, and it may become general over the face. The course of the disease is essentially chronic, exacerbations alternating with subsidence of symptoms.

The other commonly recognized form of seborrhea is known as seborrhea sicca. In this we have, in addition to more or less oiliness, an accumulation upon the scalp, its favorite site, of a coating made up of exfoliating epidermic scales, with probably more or less cells from the lining membrane of the gland ducts themselves massed together with the fatty secretion from the glands. This slightly scaling or crusting seborrhea is sometimes seen upon the face almost always in connection with the same condition upon the scalp, though it may exceptionally exist on the face alone. There may be a preponderance of oiliness with adherent crusts, or less oiliness with small fatty scales or crust specks found on the scalp and scattered through the hair and falling upon the shoulders. When the scales are greasy we have the seborrheic element present. When dry we have the condition already discussed under pityriasis which is not a seborrhea.

The evidences of infection in seborrhea sicca are much more generally acknowledged

and are certainly much clearer than in seborrhea oleosa. It is certain that this condition unless controlled by treatment will be followed sooner or later by some degree of alopecia. Sometimes it is not until after many years that the fall of hair becomes sufficient to concern the patient. When it once begins it is apt to be rapid, resulting in premature alopecia, beginning generally on the temporal region and spreading up to the frontal region and backwards, diffusing itself gradually over the vertex,—spreading laterally and symmetrically, the common frontal baldness of the young man. That it is decidedly contagious is well known, passing from husband to wife—being transmitted through barber shops and by hair dressers. Women seem to be somewhat less subject than men to the disease, notwithstanding the insanitary head toilet dictated by fashion. One would expect heads thus adorned to be much less cleanly than the closely cropped scalps of the other sex. It can only be that the scalps of women are more resistant to invasion of microbes and that they do not furnish as good a culture ground. I have the feeling, however, that seborrhea sicca is on the increase among women. I have found it in a very pronounced form of late in a number of young women, and I am wondering whether the habit of going to various hair dressers' shops for shampooing, and the custom of employing paid hairdressers—who no doubt often use their own appliances instead of those of the customer—may not be having some effect.

The word alopecia denotes not absence of hair but all degrees of thinning hair, and, of course, is the name not of a disease but of a symptom which may result from many diseases. The death and fall of the hair is a constantly occurring phenom-

enon, normal and even periodic among many animals. A more general alopecia is normal in the infant after birth, abnormally it occurs after a great number of intoxications, as well as the general and superficial infections and certain cutaneous maladies. In all cases, however produced, the phenomenon is the same and takes place by a regular series of results which have no real part in the disease, whether it be seborrhea, alopecia areata, typhoid fever, syphilis or any other condition. The predisposing cause varies, the mode of carrying out the result is the same.

No completely satisfactory classification of the forms of alopecia can probably be made until the whole subject of the pathology of the various conditions which produce this symptom rests upon surer foundation. The classification generally given by dermatologists is into four groups:

1. The congenital form.
2. Senile or coronal alopecias.
3. Premature alopecias, under which we distinguish symptomatic and idiopathic, and,
4. Alopecia areata.

The first of these classes, congenital alopecia, does not concern us, as not related to seborrhea. The last, alopecia areata, is an entirely distinct affection with a symptomatology of its own, a real dermatological entity as is generally conceded. The form of senile or coronal baldness we have already considered, and the question as to whether it is of microbic origin and is simply a sequel of seborrhea has been presented.

Alopecia simplex is the form alluded to under seborrhea sicca. It is a form not at all uncommon among women, though it seldom goes to such extent as with men. It seems true that women much more than men

show the effect of general physical condition in falling of the hair. Exacerbations are brought about as the result of almost any sort of physical disturbance, slight illness, worries, the puerperal state, prolonged lactation, anemia, and conditions which lower physical tone, each and all seem to have some effect upon a head once the sea of an alopecia, due to the microbes which cause seborrhea sicca.

While writing this paper my attention was attracted by an article appearing in the Jour. A. M. A. under the name of "Trichopathobia," by which the author meant worry of any sort concerning the hair—as to its falling out, its change of color, excess of growth in unusual places, hypertrichosis among women, etc., worry over growth of hair where it should not grow and failure to grow where it should. The cases cited were not all among women. Cases of men, whose concern over an alopecia simulating the form of that produced by syphilis, are cited, in whom the nervous apprehension approaches monomania. That the public does not look upon this affection as trifling becomes apparent upon reading such an article.

A face which shows this one symptom of seborrhea may show no other sign than the dilated glandular orifices and the oily excretion upon the face. If the condition is very marked it will not be apt to admit any other affection; but if this be less active the seborrhea of the non-hairy parts degenerates into acne. Acne and alopecia therefore form the undesirable fruitage of this disease. The first change in passing from seborrhea to acne is the formation of the comedo. This is developed from the sebaceous plug in the dilated mouth of the hair follicle. The comedo is the final form

of a seborrhea lesion and the starting point of many acne lesions.

In the formation of a comedo, a thickening of the corneous layer of the skin both at the outlet and within the follicle is found, and this thickening blocks up the mouth of the gland preventing the discharge of its contents. The plug of the follicle is made up of epidermic cells and debris with sebaceous matter, and the bacilli of Unna and Sabouraud are always found in large numbers. How much they have contributed to the causation of this condition is not possible to say. The outer layer of the extruded mass is found generally to be somewhat firm and composed of epidermic horny material. We do not call this condition of simple comedo, added to an existing seborrhea, acne, but after an infection by a new agent, generally the staphylococcus, we have the beginning of acne upon the prepared soil. The infected and degenerated comedo then constitutes the primary lesion of acne. The different stages in the acne process may be enumerated as (1) the comedo; (2) the acne papule; (3) the acne pustule; (4) the indurated acne lesion; (5) the atrophic acne lesion giving us the persistent scar.

The location of acne is primarily the face and it is generally limited to this region. Often however it is found upon the shoulders, on the upper part of the chest; exceptionally the back may be its chief seat, extending from the neck to the sacrum. It may be insignificant, consisting of but a few scattered lesions, hardly deserving to be called a disease; or abundant, causing great disfigurement and much distress. Some of the lesions are acutely inflammatory, others sluggishly so. The skin generally seems relaxed, thick, dirty and greasy from associated seborrhea, which may render it either slightly or markedly oily, and the

gland outlets not containing comedones are often quite conspicuous.

The course of an untreated acne is almost always continuous. Individual lesions disappear after a variable time, several days to several weeks, according to character, but new lesions make their appearance from day to day, from week to week.

The prognosis as to the ultimate result of a case of acne is generally favorable. The condition subsides in the majority of cases by the age of 25 or 30 years. But treatment will greatly ameliorate or altogether cure long before this age if properly carried out.

As to the therapeutic treatment of these diseased conditions, I will not enter into the subject of general constitutional treatment except to say that a physician, whether a dermatologist, a gynecologist, or a general practitioner, must always recognize that he has first a patient to treat and then a disease, and if there are other disorders aside from the particular one for which he is consulted, he will not be likely to cure his patient unless he also gives his attention to whatever other abnormal conditions he may find. Constitutional treatment may then be necessary; but as we have seen that the disease may exist in a person in other respects perfectly sound, it follows that in such cases local treatment is needed, and it is always true that whatever constitutional treatment is required, all cases of seborrhea and its allied disorders need local treatment also. We have found it pretty generally recognized that the seborrheic patient manifests the symptoms of seborrhea and its allied disorders because his or her skin has become an abiding place of myriads of microbes. It has become the host of an army of parasites. When we address ourselves to the question of topical

applications upon a microbe-infested skin one important thing to bear in mind is the great difference in the tolerance of different skins. The dosage of any medicament to be used in a microbic disease depends much more upon the tolerance of the skin than upon the resistance of the microbe. The destruction of the microbe is the end to be attained, but if in attaining it we so injure the tissues that we have another disease to treat we have not accomplished much and we certainly have not gone far toward winning the confidence of our patient. Many seborrheic patients have a skin strongly predisposed to the development of eczematous conditions upon slight provocation, while others have a very firm and resistant skin. What can be used with perfect safety in the latter cases would give disastrous results in the former. As to the region affected, the same remedy applied to the scalp needs to be used in about three times the dosage that would be safe upon the face, and upon the neck and chest in about twice the strength of an application to the face.

We cannot then follow any precise rules and give stock prescriptions for the external treatment of seborrheic conditions in which the remedies which are efficient are all more or less irritating. It is only the general principles of external treatment that I will attempt to discuss.

The cells of the epidermis are more fragile than the microbe to be destroyed, and they are reproduced, when once destroyed, more slowly and less abundantly. It is doubtful whether any medicament yet found can completely sterilize the seborrheic skin. If the infection to be reached, as in a case of pityriasis or dandruff, involves only the superficial layers of the skin a cure ought certainly to be obtained, but when, as in seborrhea, we have invading germs deep seated,

what our remedies accomplish is to destroy the superficial layers, and then by continued treatment, as more cells are pushed forward, we again destroy the germs that have invaded these, and so on until we often bring the affected part back to a condition apparently normal. But a seborrheic patient is no doubt more or less always a seborrheic patient. Although we have many useful active medicaments which when properly used can quite transform the appearance of the affected parts, it is nevertheless questionable whether what we may call a cure is not merely an amelioration.

The epidermis itself has two means of defense against the attack of the parasitic hosts—one is the resistance of the cells themselves to invasion (and again as in other diseased conditions of the general system the moral is on the constitutional side—to keep the cells in good fighting order) and the other in that very process by which the epidermis regenerates itself, by means of the constant pushing forward of its lower cells to take the place of the upper cells, that process of keratinization by which the underlying cells are changed into those of the corneous layer and are thus cast off. This constant pushing forward of new uninvaded layers of the skin is a movement against the enemy. The infected layers are cast off, new cell layers come forward, are in turn infected and cast off. This forward or upward movement is certainly one very efficient means of resistance. The therapeutic lesson from both these physiological facts is to reinforce the normal resistance of the cells, and to aid as much as is possible and safe both in the removal of the superficial layer, a process of keratinization, the transforming of the sub-corneous layers into the corneous layer of the skin.

The universally recognized therapeutic agents are all more or less antiparasitic, and most of them have also the power to stimulate keratinization. The more powerful ones and the larger doses give us also keratolytic action. In the list of agents acting in these ways we have first and perhaps most universal in its application, sulphur; (2) resorcin, and used as a substitute for this in certain cases, betanaphthol. (3) Tar in its various forms. (4) The compounds of mercury. As adjuvants to the other remedies might be added salicylic acid and ichthyol. Probably in this list resorcin and sulphur would be considered most valuable by the majority.

As to the manner of applying our remedies we have open to our choice (1) powders which are least efficient; (2) lotions, which are most agreeable to our patients, and (3) ointments which are probably most quickly and generally efficacious.

One would have supposed a few years back that the discovery of specific microbes as causative agents of specific cutaneous diseases would soon make it possible to designate certain specific antiparasitic agents which would bring these diseases quickly under control, but dermatologists have been doomed to disappointment. Optimists have become more or less pessimistic. No practical dermatologist will name one agent as a specific in skin treatment for topical application, as quinine is a specific against malaria and mercury against syphilis. There is not one remedy for psoriasis, another for ringworm, another for eczema. It may seem humiliating to have to confess it, and it is disappointing to know that the treatment of skin affections is still largely and perhaps even increasingly symptomatic. It is the symptoms that indicate the remedy and not the name of the disease, and so it results that by understanding symptoms and

being able to use a few remedies intelligently the general practitioner will often cure a skin disease which he could not even name. Perhaps the future may have in store for dermatology, as for diseases of other parts of the body, a serum therapy which may rest upon a more sure and exact basis. Perhaps that will be the great work of the dermatologist, bacteriologist and pathologist of the future.

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EXOPHTHALMOS AS A COMPLICATION OF ACCESSORY CAVITY DISEASE.

BY

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Case I. J. B., colored, 27 years old, came to the Presbyterian Hospital, April 28, 1905, with marked exophthalmos of the left eye. He had had no previous illness. He stated that the eye had begun to project the Friday before and had gradually grown worse. At the time of his entrance into the hospital, the exophthalmos was so pronounced that the lateral muscles did not act at all, while the movements above and below were very slight. There was no edema of the lids or conjunctiva. The patient complained of pain in the upper part of the eyeball, especially on pressure, and headache over the eyes which was worse on blowing the nose. On palpation nothing abnormal could be detected in the orbit. From the rapid development of the condition an acute trouble was suspected. The ophthalmoscope showed a typical choked disc. Dr. H. Harlan, who examined the eye, referred the patient to me for nasal examination. The right nostril was normal. In the left nostril there was a septal ledge which prevented a clear view of the nasal bones. Cocaine and adrenalin were applied and fifteen minutes later the nose again examined. The tissues were shrunk and pus could be seen between the middle turbinate and the outer wall of the nose. I attempted to pass a probe into the frontal sinus. The withdrawal of the instrument was followed by an escape

of pus. Dr. Harlan was notified of the result of the examination and it was decided to keep the patient in the hospital a few days for treatment. The following days the same treatment was repeated with a discharge of pus each time. With the first outflow of pus the eye began to improve and in three days time was almost normal. One week after beginning treatment, the eye had returned to its normal position in the orbit and the movements were free. The choked disc was rapidly disappearing and the pain over the eyes was much improved. Careful probing of the ethmoid cells revealed rough bone. Pus was still present in the nose. I am inclined to think that the exophthalmos was due to an acute exacerbation of a chronic disease of the frontal sinus and the ethmoid cells. The patient was one of the most stupid of his race and it was impossible to get a clear history of the case.

What was the mechanism of the exophthalmos in the above case? Since there were no symptoms of orbital abscess and drainage promptly cured the condition, it must be assumed that the accumulation of pus in the frontal sinus and ethmoid cells caused a bulging of the thin bony walls between these cavities and the orbit, with consequent pushing forward of the eyeball. Prompt treatment relieved the patient before the pus could break through into the orbit and set up an abscess. Schmiegelow and Jacqueau have reported similar cases. In Schmiegelow's case there was an acute frontal sinus empyema. Both symptoms disappeared in fourteen days. In the above case, we may say that the exophthalmos was the only external symptom of an accessory cavity disease. In exophthalmos from sinus disease there is often orbital abscess which is a serious complication. Cortiax in his work has recorded several cases of fatal orbital phlegmon from accessory cavity disease. One case, that of Fisher, showed at autopsy a direct connection between the abscess and the frontal lobe of the brain. Foucher saw a case of

orbital phlegmon follow antrum disease. Death resulted and the autopsy showed brain abscess. Snell reported a similar case.

Case II. An Italian woman came to the Presbyterian Hospital in April 1907 with marked exophthalmos. The eyeball was turned down and out. All movements were abolished and vision much decreased. The patient was referred to me from the eye department. The trouble dated back several months and began with headaches. The projection of the eyeball had been gradual. In the upper lid about one cm. from the inner canthus there was a fistula 2 or 3 mm. in diameter. A probe introduced into the opening passed down to necrotic bone in the ethmoid region. The nostril was filled with foul smelling pus which came from the space between the middle turbinate and the outer wall of the nose. A diagnosis of exophthalmos caused by disease of the frontal sinus and ethmoid cells was made. Owing to the fact that the patient was 8 months pregnant no operation could be done. She afterwards consulted Dr. Frank Crouch who operated externally with good results.

Case III. Miss McC., 17 years old, in November 1907, consulted Dr. H. Harlan for exophthalmos of 3 years duration. When the eye first projected, she consulted an ophthalmologist who referred her to a rhinologist for examination. His report was negative. She then saw another ophthalmologist who confessed his inability to diagnose her case. During the 3 years the exophthalmos varied. Whenever the patient had an acute coryza the projection of the eyeball was worse, but the eye was never normal. In August 1907 she noticed that the trouble was slowly but surely growing worse. The eye no longer receded when the "colds in the head" disappeared and diplopia was constant. Dr. Harlan found nothing wrong with the eye, vision was normal. He referred her to me for nasal examination. Careful questioning failed to bring out any new facts. The patient had not had headaches and had never noticed a discharge from the nose except when she had a cold, and this was not purulent. External examination showed no swelling over the frontal sinus or ethmoid cells. There was slight tenderness on percussion of the frontal sinus. The eye was markedly exophthalmic.

Internal examination of the nose showed a slightly swollen inferior turbinate and a large middle turbinate which was certainly obstructing drainage from the frontal sinus and ethmoidal cells. No pus could be found either before or after applying cocaine and adrenalin. Removal of the middle turbinate was advised on the assumption that the tenderness over the frontal sinus indicated some trouble in that cavity. The intermittent attack seemed to point to pus as the causative factor. The patient accepted operation and the turbinate was immediately removed with Luc's forceps. There was a gush of thick, foul smelling pus, about a tablespoonful in quantity, and some recession of the eyeball. Strange to say there was never a sign of pus afterwards. The exophthalmos gradually disappeared in about a month, tenderness over the frontal sinus could not be detected a week after the operation and the patient made an uneventful recovery. She has passed through a "bad cold" since, but the eyeball, much to her delight, remained normal. The interesting points about this case are the large amount of pus retained in the head without producing headaches or septic symptoms, the absence of pus in the nose and the prompt recovery after the removal of the middle turbinate.

Case. IV. A boy, 7 years old, was brought to the Presbyterian Hospital with a moderate degree of exophthalmos. The history showed that his trouble dated back some months and had gradually grown worse. Diplopia was present and vision in the affected eye less than normal. In the eye department where he was first examined nothing could be found to account for his trouble. Externally no deformity could be seen. There was some tenderness over the ethmoid region on percussion. Transillumination did not help in the diagnosis. The middle turbinate was enlarged and pressing on the septum. No pus could be found. The mother was advised to have the anterior end of the middle turbinate removed and the ethmoid cells curetted since there was a possibility that the exophthalmos might be caused by a closed mucocoele or empyema. The advice was not taken and the further course of the exophthalmos is not known.

Exophthalmos from disease of the frontal sinus or ethmoid cells or both may be difficult to diagnose as in Case III. When there is no external deformity and no pus

can be found in the nose, I believe the best sign for probable diagnosis is the size and appearance of the middle turbinate. If this body is enlarged or undergoing polypoid degeneration, we are justified in removing it and examining the frontal sinus and ethmoidal cells. If we find nothing pathological, we have done no harm as the patient is better off without the hypertrophy and we have eliminated the accessory cavities as the cause of the trouble. Some writers lay great stress on external deformity as evidence of disease in the frontal sinus or ethmoid cells. This sign in connection with exophthalmos cannot be depended upon, for in three of the four cases cited above it was not present. The most difficult cases to diagnose are those in which exophthalmos is the only sign and they are not at all infrequent. The history of such cases teaches that a careful nasal examination will often point the way to successful treatment.

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GENERAL SUBOXIDATION FROM PROLONGED UNREMITTING EFFORT, BOTH PHYSICAL AND MENTAL.

A Plea for Administrative School Hygiene.

BY

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Notwithstanding that the quite universal habit of holding the breath during continued unremitting effort, as in lifting heavy weights, straining at stool, etc., is familiar to everyone, the essential deleterious effect of it on the animal body is but little understood even among the rank and file of medical men. Practically every active person has experienced giddiness and many have experienced nausea from prolonged straining effort, and yet while physicians in general are familiar with the fact that acute dilatation of the heart, pneumothorax, hernias, varicose veins, etc. result

from excessive straining, relatively few are acquainted with the less violent causes and effects.

These are beautifully illustrated in cases of delicately adjusted and barely compensated organic cardiac disease, which are so sensitive to the slightest embarrassment that when engaged in taking the passive resistance movements of the Schott treatment for this class of ailments, the yielding of the patient to the strong impulse to hold the breath during a single movement of a limb results in well defined injury, whereas, when the breath is not held, this method most frequently proves beneficial.

Nausea and vomiting are thus as easily produced in these cases as in the severe straining of healthy individuals.

Holding the breath and its dire consequences is not, however, confined to physical exertion. It is a common observation that when one makes too strenuous an effort to force the memory it is never rewarded by success, notwithstanding that very soon after relaxation supervenes the much sought for recollection spontaneously obtains. If one increases the stress of effort, giddiness and tinnitus not infrequently are produced.

The pernicious habit of involuntarily holding the breath is unfortunately not confined to efforts at forcing the memory, but conversely, it is a common fault in other mental operations, especially in children, and among school children of all ages, not excluding those of the most tender years.

During engrossing attention upon abstruse problems, in painstaking endeavor in most of the studies of school curriculums, I find children continually holding the breath in their misdirected efforts to comply with the school requirements.

The teaching of proper breathing to students of vocal music, elocution and oratory, has long since become an established custom, but I know of no systematic instruction in breathing in connection with ordinary mental and physical activities of daily life.

It has long been the prerogative and obligation of the medical profession to point out to the lay public the rudiments of physiological laws and the ordinary demands of a healthful existence, and upon this ground I wish to make a plea to educators to give this matter the attention which its importance deserves, and I would propose that it become compulsory for all teachers in both public and private schools to instruct the pupils under their tutelage in regard to the fundamental importance of proper and especially *continuous* breathing, thus consciously avoiding holding the breath or any other form of suspension of breathing during conscious effort, both mental and physical.

If all mankind were instructed and trained in correct and continuous breathing during childhood, they would not only do better school work as a direct result of it, but they would bear up under and maintain a better degree of health throughout their school days, which cover the critical period of adolescence, and thus develop into stronger and healthier men and women, while the respiratory training would serve them throughout life.

Individuals engaged in office work, as bookkeepers, bankers, amanuenses, writers, etc., are particularly prone to irregular and suspended periods of breathing. I have for sometime observed it as a well nigh universal habit, and that it is detrimental to the health there can be no doubt. It is a

contributing factor, co-operating with a sedentary life, deficiency of solar light and vitiation of the atmosphere, of no mean moment.

I must confess also, that notwithstanding my own pronounced views on the subject, and an acquired habit of observing others addicted to this vice, I am continually becoming suddenly conscious of the fact that, not having been trained in respiratory culture in my youth, when intently devoting myself to writing, I catch myself suspending breathing until a sentence or a paragraph is completed, or pending reading something of absorbing interest. It has been my observation on my own person, that the intellectual faculties are dulled by the periodical suspension of respiration, and that it predisposes to drowsiness. Conversely, keeping the respiration under good control and activity, I find to augment intellectual vigor.

In view of the paucity of literature on this subject it is of interest that Lagrange, in his "Physiology of Bodily Exercise," makes the following comment:

"Effort, which we discussed at length in the chapter on 'Movements,' is the type of the actions which stop respiration by fixing the thorax." * * * * *

"Stoppage of respiration during repose has no grave consequences, because it is always followed by a compensatory effort, by a series of longer and deeper respirations, which promptly eliminate the carbonic acid, of which the quantity retained in the body cannot be excessive while the muscles are at rest." * * * * *

"Respiration, which hardly answered the needs of the system while the lungs were freely performing their work, becomes suddenly insufficient when the thoracic movements are so hindered. Thus the repeated stoppage of respiration during work may become a very efficient cause of dysp-

nea, while in a state of repose it produced but a passing disturbance." (p. 87.)

I do not agree with Lagrange that stoppage of respiration during repose has no serious consequences, because notwithstanding that each occasion is compensated to a degree by excessive respiratory efforts, yet, with an habitual vice, in an individual constantly engaged in an occupation that favors continual suspension of respiration with the associated fixing of the thorax, chronicity of cause and effect must be admitted to produce nothing less than serious consequences, especially to the growing child. Yawning is usually the extent of compensatory effort.

Sedentary school work involves repose to the muscles, yet, during continual repetition of respiratory suspensions incident to mental efforts, the prolonged fixing of the attention, etc., the most grave consequence may ultimately ensue.

The worst of it all is that those children who have as a result of outdoor country or seashore life returned to school in the highest state of physical vigor and in the highest plane of oxidative equilibrium, who but for respiratory depression in the school room would be the best prepared to withstand the work of the school curriculum, are the first to succumb to the suboxygenation incident to defective breathing.

I dare say, the cumulative results of habitual suspended respiration are quite as serious to the pupil as the now nearly obsolete imperfectly ventilated school rooms, and it is quite as important for the teaching faculty to instruct pupils in respiratory physiology as in hygiene.

The immediate and ultimate sequences of habitual respiratory suspensions are not

unlike the effects of vitiated atmospheres. It must be appreciated that in the former the intake of oxygen and the output of carbonic dioxide are equally suspended or delayed from this vicious practice and thus the subject suffers both from deficient oxygenation and carbon dioxide poisoning, from retention and effects of cumulation.

Among the group of symptoms which result from this class of etiologic factors may be mentioned: headache, drowsiness, malaise, vertigo, anorexia, foul breath, furred tongue, nausea, vomiting, a pallid and occasionally an icteric complexion, occasionally chills or chilly sensations, and more or less pyrexia.

Of the more ultimate or chronic effects may be mentioned: anemia, irritable weakness, loss of ambition, inability to do good work, softness and flabbiness of the muscles, and—worse than all—susceptibility to the several exanthematous fevers to which children are always more prone, and which commonly run a virulent and not infrequently fatal course in these cases. Pneumonia, diphtheria, and many other fatal diseases follow such susceptibilities.

If the gauntlet of parasitic diseases has been successively run, including the more common and chronic form of pulmonary tuberculosis, a general breakdown, "nervous" or physical, stunted growth or development, are not infrequent sequels.

Ambitious and hard working students are most prone to respiratory vices and thus to the ultimate consequences.

In conclusion, I would offer another comment. I have had occasion to observe some of the gymnastic exercises in use in some of the best schools, and I have the criticism to offer that they are deficient in those exercises which bring the respiratory

muscles into activity. Moreover, exercises of the respiratory muscles should be practiced *daily*, not three times a week.

A certain school in this city, which professes to give unusual attention to gymnastics, one having a fine special building for physical culture and two medical men as superintendents of this department, does not provide daily exercise for each pupil, its calisthenics are deficient in exercises involving the respiratory muscles, as a result of which the pupils not infrequently become flat chested, round-shouldered and suffer from respiratory deficiency. But the evil of this procedure is that respiratory muscle exercises are withheld until the pupil suffers from their absence, when they are offered as an extra course as "Corrective Gymnastics" at an excessive tuition fee, which even then is far short of what such exercises should be in both number and frequency of administration.

A consideration of what I deem of great importance, is a State supervision of private schools. In addition to the enforcement of good and efficient laws for the conduct of pay or private schools in regard to the physical care of pupils, as herein above discussed, there are many abuses, common especially among boarding schools, which would not be tolerated in the public schools designed for our poorest population.

Unsanitary, unhygienic conditions, old damp buildings, dangerous fire traps, and defective physical methods of teaching and training are among the many defects that should be corrected by a State commissioner, preferably a medical man, for the special purpose. Schools not conforming to the law should be deprived of the advantages accorded to educational institutions.

One crying evil is catalogue deceit and

deliberate misrepresentation of physical, hygienic or sanitary advantages which are not a reality.

One co-educational institution in New Jersey describes and illustrates fine parlors for the students' social intercourse which proved to be restricted to girls only, while even young boys were obliged to spend their time on the village streets or school play ground. Modern toilets and baths with sanitary plumbing, pictured as the common property of the students, proved to be for girls only, while the boys were relegated to filthy closets and baths used by workmen employed about the place. Gymnasium training, advertised as under a competent instructor, did not materialize during the whole session. Other faults could be mentioned as regards this one school, which plainly show that by the misrepresentations in the catalogue they are obtaining money under false pretenses, and should be prosecuted as such.

If we are to give the next generation able bodied, mentally and educationally sound men and women, we cannot do too much to correct the faults and abuses of the educational institutions, conditions and methods of the present day; and as private institutions of learning are largely commercial enterprises, they should be regulated and regularly inspected to determine that they are what they ought to be and also what they claim to be, by State officials.

Pupils must be taught in their youth how to study without strained effort, how to maintain a calm, serene and placid demeanor and to work with a quiet ease and tranquillity which will be compatible with normal continuous breathing, in which they should have daily exercises, both during

and independent of other work, until a habit of continuous breathing under adverse circumstances has been acquired.

All undue crowding of children in their school work is incompatible with the above. Overwork entailed upon children, spells strained effort, impatient application, restlessness, impetuosity and poor results. Excitable, intolerant and impulsive teachers, who have no business in the school room, intensify and magnify the evil results.

The wholesale manufacture of unstable, irritable and excitable weaklings has long been the principal product of American schooling methods. The race for the attaining of an education, has too often proved to be a race to invalidism and the grave.

When a child is overloaded with school tasks, there can be but two possible outcomes; *first* the development of drowsiness, inaptitude, incapacity, loss of interest, and malaise as a consequence of fatiguing the attention, and of suboxygenation from the respiratory vice; of the worse of the two, the continuance of the work as a prolongation of strained effort until the more frightful effect of physical and mental collapse supervenes, and a broken down, irritable weakling instead of a mentally and physically sound individual reaches the age for assuming the real responsibilities of life.

If this pointing out of a few of the common evils of present day methods, will prove the cause of their future elimination, I will be truly glad.

In atrophic rhinitis forcible removal of the scabs by the patient by picking the nose may result in perforation of the septum. It is therefore important to warn patients against this practice.

ELECTRIC MASSAGE OF THE ABDOMEN.

BY

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During the past year and a half all of my cases in which abdominal massage seemed to be desirable were put in the charge of a nurse who had been a student of the late Zabudowski of Berlin. In every case a positive accurate diagnosis had first been made. Many of these patients, most of whom were women, came regularly to the Clinic and continued the physical treatment for months, and these treatments were conscientiously carried out according to the perfect methods of massage taught by the above mentioned observer. Unfortunately for specific deductions from the results which abdominal massage alone could achieve, most of these patients had received assistance in other ways, namely, by special dieting, medication, exercise, support to the abdomen and so on: a few of them had also been treated electrically after each of the massagings. During this time I carried out with a number of my office patients a system of abdominal vibration accompanied with the use of the constant currents, with the hope of learning the practical values of these two measures in abdominal conditions—that is, hand and electro mechanical massage. In the maze of doubts, which conservatism held deeply around me, and with constant efforts to free such good results that were being reported from whatever

moral influence such treatments may have had upon the individual, and depending as much as I was able to upon evident facts of such benefits, I feel that a few practical deductions on these therapeutic agents can safely be made at this time.

To be honest, I feel that any method of abdominal massage is a therapeutic measure of only moderate value. In no abdominal condition can it be solely depended upon as a strong remedial or a certain curative agent, not even in the cases of simple constipation in which the bowels move after the treatments. In these cases, which are rare instances, the resulting defecation is usually far short of an emptying of the sigmoid, because after the movements there can often be felt scybalous masses in the lower colon. Abdominal massage or vibration, which I consider quite the same in its results, can never practically be more than a therapy which must always be fortified with other essential indicated measures, for at the best its results are always surrounded with more or less question. Still let us never forget that the illness which is a task for nature to correct offers usually a still greater task for man to conquer, and in the art of doing this a combination of different rational agents often gives the best end results to a patient, however much we may be opposed to any one means. Illness of the human body is easily and quickly contracted and often just as difficult and long to eradicate.

The clinic massage consisted of hand work, each treatment lasting from ten to twenty minutes. The various movements of superficial and deep massage were systematically carried out. After this, in some selected cases, the patients were put through the series of abdominal exercises

¹Bassler. Prophylactic Measures Guarding Against the Development of Landau Cases of Splanchnoptosis. The Therapeutic Gazette, Sept. 15, 1907, p. 601.

which I have already described. As I have said before, other indicated measures of therapy were used in these cases at the same time, but these were not any different than those employed in similar private cases. The office cases were treated with an electric, flexible shafted, motor run hand vibrator, using the long stroke. In every case the faradic current of slow or fast interruptions, or the galvanic current of from ten to twenty milliamperes was passing at the same time, using the vibrator head as one of the electrodes; the other, a large pliable Crooks metal plate covered with a thick wet cloth was placed under the lower dorsal or upper lumbar regions. The faradic current, up to the tolerance of the patient, was used for those cases in which muscular or general stimulation was indicated; the galvanic was employed for its sedative action on the nerve terminals in the gastro-enteron either in the way of an effect on the sensory or secretory disturbances, or both. The combined current was a union of the above for the more complex conditions. The vibrator head was usually the positive pole. In some instances the poles were changed in the middle of a treatment, which usually lasted for ten minutes. Toilet powder was used on the abdomen to allow the vibrator head to slip over the skin without dragging; this did not make any more appreciable differences to resistance in the passage of the current than when the skin was not so treated and it rendered the work more pleasant in every way. The patients were treated in the prone position with their knees raised and separated. Every effort was made to have their abdominal muscles relaxed during the course of the treatment so that the instrument could be sunk and held deeply into the abdomen.

The method of procedure was different in different instances according to the massage indications of the individual case, that is, to the organ or organs treated, colon, small intestine, stomach, abdominal walls, entire abdomen and so on; and according to the special object to be obtained by the choice of the currents, galvanic, secondary faradic or combined galvanic and secondary faradic, and sometimes in the choice of the situations of the two poles.



Author's Electro-Vibrator Head for Abdominal Massage.

The incorporating of the constant current with the vibration enhances the benefits of the latter. It is two fair therapies combined in one, and this tends to make better the doubtful results obtained from hand work and simple vibrations alone without requiring any extra outlay of time. The constant current reaches tissue which the vibration alone could not, at least anywhere near so effectively. This was shown in the nutritional, neurotic, atonic and catarrhal conditions treated. The vibrator method of

massage was best for deep and directional work in the abdomen, and the hand work was best for the abdominal wall conditions, but in these latter cases it may here be stated that neither one of them equalled the benefits obtained from the exercises alone. Seven of the clinic cases which had failed to make progress under the hand massage, were afterward taken and treated in the office with the electro-vibrator method with distinctly better results. One, a case of chronic plastic sigmoiditis of ten years standing, and another, a case of atonic constipation, had been most markedly benefited by the change.

The indication for massage may be said to be found in cases in which it would be desirable to increase the local nutrition and general health of the abdomen as a whole, more especially in persons who have had long standing functional disturbances of digestion, in the neurasthenias of abdominal origin, and in those who have led a sedentary life; in cases that have relaxed or prolapsed viscera with or without flabby and relaxed abdominal walls; for the purpose of stretching the bands and relieving the distress caused by plastic or fibrous perigastric or perienteric adhesions; when there is gastrectasia (not due to the malignant or the surgical cases of pylorus stenosis); in intestinal atony and constipations; and in subacute and chronic catarrhal conditions of the gut, such as is present in chronic enteritis of the small intestine and mucous colitis.

The more the cases were general conditions of the abdomen, that is involving the intestinal canal in the way of disturbances of innervation, circulation or lowered tones of the musculature of the hollow viscera,

and the less that they were the more localized conditions of the stomach proper or just the abdominal parietes alone the better were the results from the electro-massage treatment.

I have my serious doubts of the practical efficiency of either the electro-vibration or of hand methods in any of the pyloric stenoses; in hypertrophic gastritis, post-ulcer cicatricial contraction or even in the pylorospasms no good is accomplished. If by a series of lucky chances (which I doubt are possible) we could hasten the delayed stomach contents through the outer orifice, the results of this might easily be far from desirable when judged in the light of our better knowledge today of the physiology of digestion at this important point of the alimentary canal. In the disturbed motor sensory and secretory conditions of this organ I feel that no form of outside massage treatment is of any real benefit and it might even be positively harmful. In the myasthenia gastrica the Clinic also followed the instructions of Penzoldt and Stintzing, "Handbuch der Therapie," for improving the muscular tone of the empty stomach, but in no case could it be found that any practical benefit was being brought about by the work. With the electro-massage method however, the combination of the constant currents showed some results in the relief of pains and distress in the sensory and secretory conditions (this was probably due to the currents alone) and in the gastric atonies by the using of the faradic currents the results were sometimes quite encouraging (this I feel was also due to the faradic current employed). But it was not uncommon to see in those stomach conditions which were the result or part of an intestinal condition, that the stomach it-

self made improvement in the desired way when the rest of the lower canal was treated.

With both methods in the true intestinal and abdominal wall conditions the effort was worth while, and in these the electro-vibration had a marked advantage over the hand method in the deep conditions, and it was almost as good as the hand work in the parietal wall work. In the first it was more positive and quicker in its results.

To explain some of these cases to clear understanding in words is beyond me; most of the results obtained lie hidden in the unraveled mysteries of the great sympathetic system outside of which the scientific medical world still stands in unshadowed darkness. But benefits from the treatment were derived, never great, most times moderate and occasionally not at all. In a word, I feel that some of my cases did better than if they had only been treated by the generally established older time clinical methods alone. Even if I cannot explain the preceding to my own satisfaction I state it with a firm conviction and I do not believe that the details of the other treatments, or moral effect of the concerned one, had all to do with the change.

In my private work I witnessed particularly four cases of chronic membranous colitis of long standing, which under treatment from two to seven months, made decided general improvement. In two I feel that the constipation was markedly helped, in another, only moderately so, and in the fourth not at all. In one of the last two a thin mucous discharge from the lower colon of seven years duration was stopped and the quantities of tougher mucus from above in the colon decidedly lessened. Two of the other cases showed

less passing of mucus but in the remaining one there was no apparent difference in this local way. This last patient had a marked coloptosis. None of these cases were treated by the colonic irrigation method (which in my opinion is the best single method of therapy we have for these conditions), but other methods such as cascara, tonics, and so on were used. Another case of dilated transverse and descending colon, following an ulcerative colitis of three years duration made marked subjective improvement and the gut returned to a more normal size. Three cases of general relaxed condition of the intestines were treated, two were entirely relieved, and one, in which the condition was due to a depressed mental state, showed no improvement. One case of neurasthenia entericus claimed and apparently received benefit from the treatment. None of the twelve cases of splanchnoptosis showed any apparent change in the anatomical way, but nine of these claimed benefit and in seven this was apparent in the improved general state of health. These were cases in which I feel that the moral factor worked the strongest. Another case of previously constantly treated intestinal indigestion of nine months standing, in which the predominant fecal flora were the anaerobes, had much putrefaction and fermentation in the gut with increased indican and some acetone in the urine, this was discharged as cured. Whether this was helped to be brought about to any extent by the electro-massage I cannot say—I feel that it assisted to some extent. A case of recurrent enterodynia of two months duration was also discharged well; possibly here the medication used with the galvanic current alone would have been sufficient to

bring about this end, but the patient claimed that he felt better and remained longer without pain when the slow deep vibration was given along with the galvanism, than when the latter measure was used alone.

In the relaxed conditions of the abdominal walls I feel that the results obtained were but little better with electro-vibratory massagings than could have been brought about by proper support, rest at night in the prone position with the foot of the bed elevated, abundant feeding, abdominal exercises and simple faradism to the parietal muscles; as I mentioned before I think that hand massage is best for these cases. In one case of pericolic adhesions one year following an operation for suppurative appendicitis, also in cases of perigastric adhesions following a marked acute gastritis, I feel that the relief of the symptoms of distress was greater than any other method could have accomplished.

I recognize fully the unscientific and unclassified nature of the report of the above cases. To give all the details of them would smother up the few gleaned facts of the method of treatment outlined in this paper. In the many difficulties and uncertainties that confront one in the way of detailing these disorders, different as they are in different cases and constantly changing as they do in the same case with any treatment, one must be contented with more or less general statements. I merely mention a few facts of those that stand out rather conclusive as belonging definitely to this one method employed, with the hope of encouraging its further more general use. Fifty-three cases of abdominal conditions were also treated by this means, most of which recovered from their symptoms. But in none of these could I make

any positive deductions one way or the other as to the value of this particular therapeutic measure. Most of these were conditions that usually recover or improve under proper medical attentions for their disorders, or they were conditions of a nature, and too far advanced to expect much results in the therapeutic way with any measures. Some again, did not receive enough treatments for results, and others are still under observation.

Summing up my experience in a broad way I state that electro-vibratory massage is of value in the therapy of abdominal conditions in all motor, some sensory, and a few secretory disturbances of the intestines, both locally and as they may directly or reflexly affect other organs or other parts of the body; that it is a measure of value in the disturbed states of local nutrition of the reachable abdominal organs and often of the abdomen as a whole, and its influence here is to better the general state of health and influence favorably those katabolic and neurasthenic conditions which take their origin in the abdomen cavity; that it is the best single medical measure we have today in the treatment of exudates and fibrous adhesions found about the abdominal portions of the alimentary canal; that in some of the mysterious, tardy intestinal dyspeptics, and also in the catarrhal conditions, it might be employed with satisfactory benefit to the patient; that it is the best physical treatment for abdominal conditions that we have, ahead of any method of hand massage even if these treatments are also followed by the use of the constant currents—the electro-vibratory massage is more directional; that its use should always be preceded by an accurate diagnosis, since in some of the conditions

of the gastro-enteric tract it might do positive harm (malignant disease, ulcers, suppurative and acute catarrhal conditions); that following a plausible indication for its use, it should be employed by the physician himself, or under his immediate direction, in suitable combinations of the plan of the vibration massage and the character of the constant currents used, and it should then be employed with a direct, consistent and continuously kept up effort to accomplish some main purpose by it; and lastly, my further belief that it is a measure worthy of more extensive application and trial not only by the gastro-enterologist but by practitioners in the other departments of medicine.

228 East 19 Street.

THE ROLE OF THE DOCTOR IN PRODUCING OR MAINTAINING THE MALADIES DERIVED FROM THE IMAGINATION.¹

BY

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Washington, D. C.

The purpose of this communication is twofold, *first*, to discuss the supposed stigmata of hysteria and the so called traumatic neuroses, and *second* to show the necessity of guarding against the error of the "school of the lizard" in the practice of curative suggestion.

Let us take the case of a child who suddenly falls; his nurse runs to help him, "poor little fellow, you have hurt yourself, do not cry, etc., etc." Naturally the child continues to cry. He would have behaved quite differently had the nurse laughingly

said "what a clever boy you are, how your cousin would have liked to have done that, but get up now, that is enough." The tears would have been instantly stopped, and the episode ended.

This incident contains all the psychology of the maladies engendered by the unskillful suggestions of medical men.

Let me give you another incident, this time a medical one, which took place under conditions compatible with experimental requirements. It was quoted by Dr. Bevan, Professor of Surgery in Chicago University.

Some years ago there was a railway accident in this country in which out of 256 passengers 123 were wounded. Out of this number only two sustained severe injury to the nervous system; and neither of these cases suffered from traumatic neuroses.

Twenty-four persons complained of injury to the spinal cord, and their statements were affirmed by medical witnesses.

Putting aside the simulaters, of which there were several, the others were treated by medical men who believed their patients to be suffering from some serious but *obscure* injury and who did not hesitate to affirm to their patients and their friends that the malady was of a dangerous nature.

This particular case is a good example. It is that of a man who had not been externally injured, and who undertook a journey of 200 miles immediately after the accident. The next day, on arriving at his home he became stiff and complained of pains. His wife called in the doctor, who informed the patient that he was suffering from Ehrichsen's disease and that he must remain in bed for five or six weeks. He went to bed and took enormous doses of bromide and chloral; applications were also made

¹The evidences upon which this doctrine is based are gone into more fully by the author in an article upon Hysteria, to appear in the September issue of "International Clinics."

to the spinal column. The patient had been in business but had failed. The drugs and the confined life produced a loss of weight and strength; and his general health became impaired.

Three months later Dr. Bevan saw him. He pretended to have lost his reason and that the lower limbs were partly paralyzed. But Dr. Bevan took him out of bed, and persuaded him, with his help, to walk round the room. He recommended him to get up and take exercise, assuring him at the same time that he was not injured, and that he could be cured, if he wished it, in a month. He replied: "My doctor told me I would always be an invalid and you tell me that I am not ill at all, who must I believe?" Six months after the accident the suit was brought against the railway company. The proceedings were hastened, the death of the patient being feared. The patient claimed damages on the ground of permanent injury to the spinal cord. The proofs were made before the judge by the dynamometer, the esthesiometer, electricity, etc. He was given a large sum of money as compensation. A short time after he took up his work again.

Another case is that of a man who had no external injury, but who was greatly frightened, a typical case of traumatic hysteria. He too called in Dr. Bevan. He complained of a severe pain in the back and claimed that the lower limbs were paralyzed. At the end of a week, the doctor took him in his arms and made him stand up, assuring him at the same time that he was not injured, only frightened. He cried like a child. In ten minutes he was persuaded that he could walk. He left the hospital three weeks after the accident. Shortly after leaving, he consulted a neurologist who told him he was suffering from a "commotion" of the spinal cord.

Dr. Bevan then sent him to another medical man to whom he had already written his opinion of the case. This doctor thereupon advised the patient to commence work again, and he did so. After he was cured he was very grateful for the treatment, although at the time it appeared very severe. As he admitted, he was so thoroughly frightened, that if he had been told he was suffering from an injury of the spinal cord, he is certain that he would have become a chronic invalid.

This communication made in 1900 was received by its hearers with much skepticism. Dr. Bevan's opinion is affirmed, however, by such a case as that cited by Professor Bernheim.

It is that of a doctor's wife suffering from a pseudo angina pectoris, which several Parisian physicians had diagnosed as myocarditis, rheumatism of the heart with angina pectoris. These opinions naturally weakened her confidence in Professor Bernheim, who at the commencement of the psychotherapeutic treatment had made a bad impression by being too abrupt. In spite of that, after three years of violent suffering, the patient decided for the third time to consult Bernheim; and this time she was cured though the treatment consisted of nothing but suggestion. Bernheim has also shown that although the pain of gastric ulcer really corresponds to a given area, as shown by Head (*Brain*, London, 1894-5), Mackenzie (*British Medical Journal*, June 23d, 25th, 1906) and others, the last calling it however, the viscerosensorial reflex (autonomous), yet its situation is not that described in the text books and supposed to be more or less immediately over the ulcer.

The pain in this region is often caused by the direct suggestion of the observer; and its favorite spot, the pit of the stomach, is

in reality always more or less sensible to pressure; but in the neurotic state often induced by the anemia in gastric ulcer, one easily mistakes the exaggerations of this normal sensation for a pathological area of hyperaesthesia. The classic experiences of Bernheim demonstrate this. *A fortiori*, when there is no real viscerosensorial reflex, the attention of the patient is easily taken up with his slight digestive disorders, and helped by the unskilful suggestion of the medical man and by the irritation of drugs the patient ends by "carrying his stomach in his head," as Dejerine picturesquely puts it.

That this is really the case is shown by the success derived from treatment directed entirely towards the dispelling of the fixed idea which has become an obsession, which Drummond (*British Medical Journal*, July 7, 1906) describes so well as being refractory to ordinary arguments.

The psychological mechanism will be discussed at the end of this paper; for the moment I have no need to dwell upon the grievous consequences that this unskilful suggestion has brought upon the public, for in an article which appeared in *La Presse Medicale*, Dejerine (*Les Fausses Gastro-pathies La Presse Medicale* 28th and 31st March, 1906) has discussed it at length.

I believe that the general practitioner often thoroughly understands how easily he may create or strengthen such obsessions of diseases of the genital organs. One may also say the same of the disorders of the heart; but I do not believe that the fact is fully realized that a cardiac phobia may be induced in a suggestible patient (and a large number are suggestible) by an ordinary auscultation, unless the patient is told in a convincing way that his chest and heart are both sound.

The general practitioner does not always know how frequently symptoms are produced by the medical examination. This needs no further proof than the slowness with which have been accepted Babinski's ideas about the production of the stigmata of hysteria. It is significant to note that amongst the carefully observed cases of Bernheim even grand hysteria rarely presents disorders of degeneration and it seems extraordinary to me that the assertions made by an observer like Babinski, whose exactness and precision are unsurpassed in any country have not yet influenced more clinicians.

In this period of the diffusion of the knowledge of bacteriology and of the social measures taken against tuberculosis, phthiophobia is not uncommon. I believe that this phobia is, sociologically speaking, salutary, for epidemiologists know that nothing is more difficult to attain than a common action against contagious disease. But when a fatal and terrifying epidemic comes suddenly, and a general public fear is produced, a powerful reaction is the result.

I had the good fortune to observe examples of this during an epidemic of the plague in South Africa and of yellow fever in the United States. In France the same has occurred regarding cholera, plague and rabies.

Although these fears are often beneficial to the public, yet sometimes they threaten the health of the individual; and a delicate test of a psychotherapist's judgment is to know when it is necessary to urge the patient to action by encouraging a healthy fear of a chronic disorder or when it is advisable to check the too vivid imagination of the tuberculous. It may be objected that the people suggestible in this way, are

exclusively the psychasthenics and the hysterics, and that this is of little importance, for in any case they will be suggested by somebody, and can as well be treated for one of the ailments already mentioned as for any other.

As a matter of fact, it is not only the hysterics and the psychasthenics who are medically suggestible. Suggestibility is proportionate to ignorance. A child will believe anything. In medical matters the public is still in its infancy. We must realize the harm done by "medical secrecy" in this respect.

These suggestions may appear absurd to us; but they are not so to the laity, and many general practitioners are aware how largely disorders are originated in this way.

The remedy of this state of things I believe is the teaching of psychology among the other sciences as a branch of physiology in the universities. How often when I have counselled this study as a mental fortifier has the advice been received with such replies as "but that is only metaphysics; no one can understand it; it is only a lot of words which mean nothing."

No one will deny that the mentality of the public depends upon education, and the influence which should render it rational could not come from a better source than some one versed in psychology, who should be the family physician.

I was much impressed with the ability of the children in the School of Education in the University of Chicago to penetrate into realities. In order to avoid the grievous habit of accepting everything without criticism as the ordinary educations permit one, they are not even taught to read. Now suggestion is only the acceptance of the major premise without criticism. A

striking example of this is shown in systematized paranoia, where all the trouble arises from the inability to criticise the false major premise.

Another example was furnished by a farmer during the propaganda of the mosquito-borne nature of malaria. He remarked: "Even if you repeat that until the judgment day, nothing would make me believe it; it is against nature."

Fundamental truths accepted by people are simply those to which they feel themselves incapable of bringing the criticism of experience but on which nevertheless all their acts are founded, so much so that they would think their individuality was different did they do otherwise.

For example, when a gastropath who for some years had believed she had a disease of the stomach, was persuaded by the psychotherapist in the *Salle Pinel* that the ailment was entirely in her imagination, she exclaimed: "I do not seem to be myself, I feel as though I were some one else." When Sollier, by means of mechanical awakening of the sensibility, brings grand hysterics out of their dream life, they frequently make a similar declaration. There we have the advance of the personality towards the normal.

The diminution of the personality has been particularly well studied by Raymond and Janet in the psychasthenics who have lost the feeling of reality at is is expressed by the latter. Let me instance specially a case described in Vol II. *Les Obsessions et la Psychasthenics* by these authors.

Still more interesting is the case reported by Deny and Camus under the title of "Delusions of Negation." These cases being, however, constitutionally defective are only useful for the purpose of showing the pro-

found suffering caused by the feeling of the loss of personality.

The fixed ideas differ completely in this respect for we all have them except perhaps the most scientific among us; for we are all subject to the fault of not criticising exactly the facts on which are based the ideas which become fixed in our minds, that is to say our convictions. The most important duty of the neurological specialist is not confined to showing his patients how to get rid of their fixed ideas; but must extend itself to demonstrating these psychological laws to his colleagues. He should teach them to act towards their patients as the good nurse does to the fallen child, turning the attention away from those symptoms which might develop a hypochondriacal state. Thus psychotherapy answers Hamlet's question, "But who can minister to a mind diseased?"

We should also fulfil our role in the sphere of preventive medicine, as we now do as medical consultants and in sanitary researches.

To pretend to remove the lizards from people's bodies by means of false surgical operations, to prophesy with phosphorus on the wall, and all such manoeuvres are as deplorable in practice as to lie to children; and they are just as certainly found out.

Other lizards are born as easily as the fantasy which in the first place created them. "The school of the lizards" merely grafts or nourishes evil suggestion in the public mind.

It is a sin of omission not to do all we can to explain vigorously both to the lay and the medical public the truths of the psychic mechanism as we come to understand them. These truths should replace the pseudo-scientific lucubrations by means of which the public is at present exploited by charlatans.

In only one country that I know of are there papers sufficiently solicitous of the public interest to refuse the advertisements of which they disapprove. Frequently appearing scientific articles too, written by recognized authorities, would do much to destroy the injurious influences of charlatantry. In this respect, France takes the lead; for it is not thought to be below the dignity of a professor of the University to explain by means of the daily press the scientific questions of the day.

It is partly to draw the attention of other countries to this excellent custom, that I, a stranger, take the liberty of addressing myself to the neurologists of France on such a subject as the injurious suggestions of the adherents of the "school of the lizard."

A distinguished Professor contends that traumatic neurosis is not derived from medical suggestion; but nevertheless it is my belief that that clinical picture is as much of medical painting as was the hysteria of Charcot's days, as everyone now admits.

In my opinion the obstinacy of this manifestation of hysteria is chiefly the result of the lack of confidence shown by the doctors who try to treat it. In saying this I am not forgetting how the fixed ideas are fortified by the hope of the recompense to be obtained by their persistence. At the same time I feel sure that an authoritative and persevering treatment of such cases would avoid much litigation.

The medico-legal principle regarding traumatic neurosis should not differ from the admitted one of modified responsibility towards diseased individuals. Just as a homicide is not regarded as culpable when the victim on account of heart disease dies from a comparatively slight blow; in the same way the susceptibility to suggestion as shown by a development of a traumatic neurosis should at least considerably attenuate any recompense which might be due under the *lex talionis*.

CORRESPONDENCE.

ETIOLOGY AND DIAGNOSIS.

THE OWNERSHIP OF THE PRESCRIPTION.

BY

THOS. STOTESBURY GITHENS, M. D.,

Atlantic City, N. J.

August 1st, 1908.

*Editor of American Medicine,**Dear Sir:*

The editorial on page 199 of *American Medicine*, concerning the refilling of prescriptions, does not in my opinion, reach the heart of the matter, and for this reason, the prescription is an order on the druggist for certain articles. If these could be bought without an order from a physician, there is no reason why the patient or anyone else, should not get them as often as he wishes, just as he might cut out a prescription from a newspaper and have it filled. If however, the prescription contains a drug which could only be obtained with the authority of a physician, the case is entirely different. The prescription then becomes analagous to an order on a hospital for admission to the ward, in case such could be had only on presentation of an order from a physician. If the patient had paid for the visit at which this order was given, and claimed that the order therefore belonged to him and he could use it again or give it to a friend to obtain his admission, would this claim be just? No, because he did not pay for the order, but for the advice. The charge would have been the same if only local treatment had been given or one prescription or three. The charge is thus not for the prescription or order. The statement in the editorial, that a plan from an architect, being an order on a builder, is analagous, is fallacious, because no such plans are required by law. The whole matter hinges on the question, whether the contents of the prescription could be obtained without an order from a physician, and the fact of the visit having been paid for or not does not enter into the matter at all, as far as I can see.

Wasserman's Reaction in the Diagnosis of Syphilis.¹—At the Congress on Internal Medicine, held in Vienna in April of this year, Professor Wasserman gave a full description of this new method for the diagnosis of syphilis, elaborated by himself and Bruck. They started from the point that in individuals suffering from an infective disease the infecting agent can only exercise its general effect when it is soluble, or in a condition approaching solubility, in water. The tissues react to the infecting agent by producing certain bodies known as reaction products. They used the methods devised seven years ago by Bordet and Gengou for the investigation of other diseases. To prove the presence of these reaction products in the body fluids, extracts of the virus concerned, technically known as antigens, are used, and the reaction products are described as antibodies. The principle of the method depends on the fact that if an antigen is brought into contact with its corresponding antibody, any "complement" present becomes combined. Therefore the method is known as the complement-combination method. To the mixture of antigen, antibody and complement one adds an inactivated serum which dissolves red blood corpuscles, i. e. a hæmolytic amboceptor with the red blood corpuscles which go along with it. This amboceptor requires, before it can dissolve the red blood corpuscles, the presence of the complement. If this complement is already bound up by the union of antibody and antigen it is no longer at the disposal of the hæmolytic amboceptor. Therefore the red blood corpuscles remain undissolved. But if the complement is uncombined, it is still at the disposal of the amboceptor, and solution of the red blood corpuscles occurs. It was found that for the object of binding up the complement it is not necessary, as in typhoid-antigen and typhoid-serum, that both molecules (antigen and antibody) should have any specific relation to one another. The binding up of the complement is more a general physico-chemical phenomenon which occurs when two colloid

¹Editorial, *Edin. Med. Jour.*, July, 1908. -

molecules meet. The disappearance of the complement in a mixture indicates nothing more than that in that mixture two different kinds of molecules are present, and have entered into combination. Whether this combined substance is a protective or a toxic substance is not known. Since the virus of syphilis cannot be grown outside the body, an extract was made from the organs of a syphilitic foetus. The second component, namely, the serum of syphilitic individuals, was obtained at first from inoculated monkeys, and later from human beings. Measured quantities of the extract from the syphilitic organs and the inactivated serum of syphilitic individuals are mixed together; as complement some fresh normal guinea-pig serum is added. These are incubated for some time at body temperature; then is added an inactivated amboceptor hæmolytic for a given animal's blood; and, lastly, a measured quantity of washed animal blood. The whole is incubated at body temperature for a time. If the red blood corpuscles remain undissolved the reaction is positive. Such was the method as originally employed, but recently several observers have tried to simplify it. Levaditti noted that in certain circumstances an extract from normal organs in combination with syphilitic serum shows the phenomenon of complement-combination. It is conceivable that the reaction is due to a substance which is normally present in the human and animal body, and that in the tissues of syphilitics substances are present which can combine with it. Wasserman started on the supposition that the substance was a fatty one—a lipoid substance. Then it was found that the active principle of the extracts was soluble in alcohol. Fornet and others showed that by the addition of the serum syphilitics to certain antigens (*e. g.* extract from organs of a syphilitic foetus) under certain conditions a precipitation can be obtained. It was then attempted to replace the more complicated "complement-combination method" by a simpler precipitation method. Instead of the unknown fatty substance extracted from the organs, an attempt was made to use lecithin as the antigen, as it could be more easily obtained than an extract from syphilitic organs, and the serum of syphilitic persons

does precipitate a solution of lecithin, as do the bile salts, soaps, and other fatty substances. Klaussner further showed that the addition of distilled water to the serum of syphilitics produces a precipitate, and proposed to use that as a sero-reaction for the diagnosis of syphilis. He thinks the precipitate is due to the presence of globuline in the blood serum of syphilitics. But these precipitation tests are not reliable as normal serum gives them in some cases.

At present, therefore Wasserman thinks that the original method though complicated, is the only reliable one. The extract of the antigen must be made from the organs of syphilitic foetuses, as one does not get the same results by using normal organs. He now uses alcohol to extract the antigen from the syphilitic organs, as he finds it is more easily extracted by alcohol than by water.

As to the reliability of the reaction; 1,982 cases of syphilis have been tested up till now by various observers. Of those showing manifest symptoms, 90 per cent. gave a positive reaction. Of those who certainly had syphilis, but showed no signs of the disease at the time of examination, 50 per cent. gave a positive reaction; 1,010 control cases where syphilis could be absolutely excluded gave every one a negative reaction. Therefore Wasserman holds that a positive reaction is definite proof of the presence of syphilis, but a negative reaction is of no value one way or another. Wasserman also thinks that the method could be quite easily applied by a trained staff in laboratories, to which physicians could send specimens of blood to be tested. At present the test cannot be carried out except by an expert.

It is well to bear in mind that in some instances of so-called rheumatic or gouty affections of the shoulder-joint the pain and disability are chiefly attributable to an inflammation of the subdeltoid bursa. This of itself may cause such active phenomena as to lead one to suspect osteomyelitis.

When both tonsils are to be amputated, better work can be done by waiting for the bleeding to subside after the removal of the first before operating upon the other.

TREATMENT.**Treatment of Cholera Infantum.¹—**

The child should be kept in a crib or bed, never carried or rocked, as this causes an extra drain in the strength. Clothing should not be too abundant, preferably of light flannel, and the abdomen should be covered with a flannel protector. If the case is a severe or neglected one, a reliable nurse will often do inestimable good. She will give the mother a feeling of security, which in the absence of the physician she may lose, and losing, fail to carry out his directions properly at a critical time.

Give first castor oil, one teaspoonful if under three months; two, between three and six months; a tablespoonful if over six months. If rejected (usually with the undigested contents of an over-filled stomach) wait a half hour and repeat. If again rejected give it ice cold. Give *nothing* by the mouth for two hours after the first retained dose, then allow as much water as the child wishes every two hours; not oftener, as the stomach needs a complete rest. Allow no food but the water for twenty-four hours, and in the severe cases for forty-eight hours. This is when your nurse will come in handy, as it is hard to convince the mother that the child will not starve to death, which it will in no case do. Have the napkins numbered and dated, as they are your best chart. When the stools become infrequent, free from curds, green mucus, and bad odor, which they will if the described rule has been carried out in detail, the time has come to feed, and not till then.

Begin feeding at four hour intervals with water allowed half way between. For a child of three months or under, take a teaspoonful from the upper ounce of top cream taken from a quart bottle of good milk, after it has stood on ice if possible ten hours. Add two tablespoonfuls of water and two teaspoonfuls of lime water for each feeding. On the second day, if all goes well with the stools, give this feeding every two hours. Later increase the amount of food by using more of the upper

ounce of top cream and more water, but keep the proportion of proteid low by using only the upper *ounce* of top cream, using more bottles when necessary. For a child of six months begin feeding exactly as with the three months' child, except use two teaspoonfuls of the upper ounce of top cream with three tablespoonfuls of water and three teaspoonfuls of lime water to each feeding. Increase the amount of the feeding and of the constituents after two or three days, in the same manner as for the three months' child, and after a week or so use the upper two ounces of top cream, diluted with water, as before.

Children from one to two years old should be fed at four hour intervals, but a cereal gruel, preferably pearl barley, cooked three hours, should replace the modified milk. It should be given in three or four ounce feeding and gradually increased. Cream of wheat, rolled oats, or rice may be substituted.

Chronic cases under one year old do better on condensed milk, diluted with sixteen volumes of boiling water, but this diet must not be a permanent one, or nutritional disorder will supervene.

If choleraic symptoms are prominent at the start, or if there is much tenesmus, I instill normal salt solution into the rectum by means of a soft rubber catheter attached to a fountain syringe, with ten to twelve inches fall.

To capitate: Cholera infantum is a food disease and should be treated by emptying the intestinal tract, and then feeding only what the child can digest with a weakened gastric and intestinal mucosa. Opium or its derivatives only postpone disaster. Intestinal antiseptics are worse than useless, as they are bound to irritate the stomach. Rational treatment cannot consist in drugging, but in a painstaking, detailed assisting of Nature.

The Treatment of Acute Prostatitis.¹—

As Wolbarst well says the tendency of acute prostatitis is to undergo resolution, in spite of all or no treatment. All we

¹P. A. Smithe, M. D., Oklahoma, N. Y. Med. Jour., July 25, 1908.

¹A. L. Wolbarst, M. D., International Jour. of Surgery, July, 1908.

therefore have to do is to encourage this tendency and help it along, by diminishing the source of infection and reducing, as far as we can, the already existing inflammation in the organ. The local urethral treatment is the first step in this direction. Next in importance is the application of the usual antiphlogistic measures. Light diet, absolute rest in bed, free movements of the bowels and the local application of heat are to be insisted on as general measures of relief. The heat may be applied to the perineum either by means of the hot water bag or through the agency of frequently repeated sitz-baths. Very often, the application of heat per rectal douche will be found more than grateful to the patient and of decided value in diminishing the local congestion and inflammation of the prostate. Occasionally, however, it will be noted that the heat is not productive either of comfort or benefit, and in these cases, cold will be found far more useful. The fluid is brought into contact with the surface of the prostate through a double current rectal tube, Kemp (Fig. 1) or Chetwood (Fig 2) pattern, used two or three times a day. The douche is followed by a rectal suppository containing extract of opium $\frac{1}{2}$ to 1 gr., to which the addition of ichthyol, 5 to 10 minims, will often be found advantageous. The latter drug sometimes produces extreme pain and irritation, and it should be withdrawn if the suppository does not prove immediately effective.

If urinary retention supervenes, the bladder should be emptied by a soft catheter, and thoroughly irrigated with a mild antiseptic solution. Casper recommends irrigation with silver nitrate 1-2000, but the author believes this solution will prove decidedly too strong for American patients with acute prostatitis. If for any reason the catheterization cannot be performed, perineal section with permanent bladder drainage will have to be resorted to.

Internally, the alkaline solutions, the balsamics and the urinary antiseptics, so-called, have their limited field of usefulness in this condition. Caspar advises the internal administration of salicylic acid (gr. 5) in this condition. At best we can only hope to make the patient as comfortable as possible during the period of inflamma-

tory reaction, and to this end our therapeutics should be directed, as the symptoms arise.

The acute stage passes off in a week or ten days and the process gradually undergoes resolution entirely, or, more commonly, in part only, leaving the patient with a chronic parenchymatous or follicular prostatitis. Under no circumstances should the prostate be massaged while the inflammation is at its height. After two or three weeks, when resolution is well under way, massage is not only permissible, but positively demanded, as an aid to the process of resolution. Massage should be gently and carefully performed once or twice a week, followed each time by a mild bladder irrigation. If the prostate is hard and large, the process can be repeated at shorter intervals.

NEWS ITEMS.

The Edward N. Gibbs Memorial Prize.—The New York Academy of Medicine announces that the sum of one thousand dollars will be awarded to the author of the best essay in competition for the above mentioned prize. The subject of the essay, as stated, shall be, "The Etiology, Pathology and Treatment of the Diseases of the Kidney." Essays must be presented on or before October 1st, 1909. The three subjects mentioned in the title as above given, need not be treated with uniform fullness, but new discovery or fruitful research will be considered the standard of merit. Each essay must be in English, typewritten, designated by a motto or device, and accompanied by a sealed envelope, bearing the same motto, or device, which shall contain the name and address of the author. No envelope will be opened except that which accompanies the successful essay. The Academy reserves the right, according to the direction of the donors, not to award the prize if no essay shall be deemed worthy of it. The Academy will return the unsuccessful essays, if claimed by their respective authors, or by authorized agents, within six months. An essay must show originality in order to obtain the prize. The competition is open to the members of the regular medical profession of the United States. The original of the successful essay shall be the property of the Academy, and, according to the deed of gift, will be published in its Transactions. The essay shall be transmitted to the Committee of the New York Academy of Medicine on the Edward N. Gibbs Memorial Prize. John A. Wyeth, M. D., President; John H. Huddleston, M. D., Recording Secretary. The New York Academy of Medicine, New York, June 1, 1908.

NOTES ON MODERN PHARMACEUTICAL REMEDIES.*(Continued.)***CYSTOGEN-LITHIA.**

Description—Compressed effervescent tablets.

Formula—Cystogen (hexamethylenetetramine) gr. 3. lithium tartrate gr. 3.

Action—Renders the urine alkaline and antiseptic and increases the elimination of waste urinary products.

Uses—Recommended in gout, rheumatism, calculus, cystitis, prostatitis, gonorrhea and whenever a urinary antiseptic is indicated.

Dosage—One or two tablets in a glass of water three or four times a day.

Special Consideration—The purity of the ingredients and their freedom from adulteration.

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Manufacturers—The Cystogen Chem. Co., St. Louis, Mo.

PROTARGOL.

Description—Protargol is an impalpable yellowish powder, containing 8.3 per cent. silver in firm chemical union with an albuminous base. It is soluble in water to the extent of 50 per cent. and in watery solutions is not precipitated by sodium chloride or albumin.

Action—Strongly germicidal even in weak solutions. Owing to the fact that it is not precipitated by the secretions has a deeper penetrating action than nitrate of silver. Does not produce irritation.

Uses—Recommended as a substitute for silver nitrate in the treatment of gonorrhea, affections of the eye, ear, nose and throat, diseases of women, etc., and as an antiseptic and cicatrizant in wounds and ulcers,

etc., internally in gastro-intestinal affections, etc.

Dose and Manner of Use—Acute gonorrhea, $\frac{1}{2}$ to 1 per cent.; affections of the eye, ear, nose, and throat, 2 to 10 per cent.; wounds and ulcers in ointments and solutions, 5 to 10 per cent., and as a dusting powder. Internally in doses of 1 to 3 grains.

Special Considerations—Hot water must not be used in the preparation of solutions. The best way to make them is to dust the powder in a thin layer on the surface of the requisite amount of water and allow the fluid to stand for ten or fifteen minutes, without stirring or shaking.

References—Professors Neisser, Finger, George H. Price, Kreissl, Winfield Ayres, White and Martin, Blerhoff, Dr. Ludwig Weiss, Professor Marshall and Dr. Neave.

Manufacturers—Farbenfabriken of Elberfeld Co., New York City, N. Y.

LACTOPEPTINE.

Description—A fine white powder, slightly hygroscopic, of pleasant, aromatic taste. Supplied in powder or tablet form.

Formula—Lactopeptine is a mixture of pepsin, pancreatin and diastase with small quantities of both lactic and hydrochloric acids, and milk sugar.

Action—This combination of the digestive ferments augments gastric and intestinal digestion, and seems to stimulate the glandular secretions of the organs engaged in the processes of alimentation.

Uses—Lactopeptine is used to aid and promote digestion and to overcome gastric and intestinal indigestion, thus allaying irritation. It is recommended in the treatment of acute and chronic types of indigestion, and has been found effective for relieving and correcting these disorders and their attending symptoms.

Dose and Administration—10 to 20 grains before, during or after meals as indicated by presenting conditions.

Bibliography—Too voluminous for reproduction.

Special Considerations—The care and special methods used in obtaining the ferments employed, their freedom from adventitious material and the constant uniformity of the composite product.

Manufacturers—The New York Pharmacal Assoc., Yonkers, N. Y.

POLLANTIN

(Dunbar's Serum)

Description—Pollantin is a serum obtained from horses which have been injected with gradually increased quantities of a toxin prepared from the pollen of ragweed (Genus *Ambrosiae*). It is a clear, slightly yellowish fluid of alkaline reaction and with the odor and taste of a dilute solution of phenol. On standing a slight precipitate is deposited. Exposed to the air it soon decomposes and loses its efficacy. A powder, yellowish in color and almost odorless, is now prepared by completely drying the serum in vacuo at about 45° C.

Formula—Pollantin contains 0.25 per cent. phenol which has been added to it as a preservative.

Action—This remedy acts through its anti-toxic or neutralizing influence on the pollen toxin. It may and doubtless does contain certain complex organic substances which have the power of increasing the physiological resistance of the nasal mucous membranes to toxic irritation.

Uses—Pollantin is recommended and quite extensively used as a curative, palliative and prophylactic remedy in hay fever.

Dosage and Method of Administration—One drop should be instilled by means of a medicine dropper into each eye at the outer canthus each morning on arising. Also one or two drops should be applied at the same time, to one nostril, the other being temporarily closed.

The first application or so, may cause considerable reaction, which usually soon passes away. Pollantin is used topically only and is not administered hypodermically. The powdered form seems to represent a distinct progress over the liquid.

Special Considerations—Authentic reports give the following results from the use of pollantin:

	1904	1905	1906	1907
Effectual	45	52	51	54%
Partial	26	30	38	38%
Negative	29	18	11	8%

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American Agents—Fritzche Bros., New York, N. Y.

PEACOCK'S BROMIDE.

Description—A clear, dark brown, aromatic elixir with the characteristic taste of the bromide salts, though greatly modified in degree.

Formula—Each fluid drachm contains 15 grains of the combined neutral bromides of potassium, sodium, ammonium, calstruum.

Action—The characteristic sedative, antispasmodic and hypnotic action of the

bromide salts, with the dangers of bromism and gastric disturbances reduced to the minimum.

Uses—Peacock's Bromides is indicated whenever and for whatever conditions any of the bromide salts can be properly employed.

Dose—One to three drachms in water, according to the amount of bromides desired.

Special Considerations—Peacock's Bromides is claimed to be prepared from the purest of neutral bromide salts, and it can, therefore, be administered over long periods with minimum dangers of bromism or gastric derangement. The salts entering its composition are said to show a higher state of purity than is exacted by the United States Pharmacopoeia, which fact is attested to by the analyses of several chemists of renown. Attention is called to the uniformity and stability of the preparation.

Bibliography—Chemical analyses by C. E. Caspari, Ph. D., Prof. of Chemistry, St. Louis College of Pharmacy; Edwin H. Keiser, Ph. D., Prof. of Chemistry, Washington University; H. Helbing, F. C. S. and F. W. Passmore, Ph. D., London, England; Edward Gudeman, Ph. D., Chicago; Wm. B. Hazard, M. D., "The Bromides in Epilepsy," Gaillards Medical Journal; Chas. H. Hughes, A. M., M. D., The Alienist and Neurologist.

Manufacturers—The Peacock Chemical Company, St. Louis, Mo., U. S. A.

THERAPEUTIC NOTES.

The Hemostatic Properties of Hydrogen Peroxide.¹—As a hemostatic hydrogen peroxide is most useful in controlling that form of hemorrhage known as "parenchymatous," when every little arteriole and capillary is copiously pouring out blood. Under these circumstances, says McKenzie, the ten-volume solution of the liquid applied by means of swabs will dry up the bleeding surface with almost magical rapidity. This action reminds one of the hemostatic action of hot water, but the manner in which the two substances act is

different. Hot water stimulates the muscular tissues of the vessels to contract, while hydrogen peroxide induces hemostasis by causing a rapid formation of fibrin in the mouths of the several vascular channels. Hydrogen peroxide is, of course, easier to handle than hot water, and it is free from the risk of burning the parts.

While H_2O_2 may be used as a hemostatic under almost any circumstances, it is specially relied upon in bone operations like the radical mastoid, when free oozing from the osseous wound prevents the all-important continual inspection of the depths of the cavity. It is also of the greatest service in the surgery of the nose, where operations are liable to be accompanied and followed by an amount of hemorrhage not only inconvenient but even at times dangerous. In epistaxis also, which, it will be remembered, is usually due to the rupture of a small vessel low down in the anterior part of the nasal septum, hydrogen peroxide applied to the bleeding area on a tampon will suffice in most cases to bring the hemorrhage to a standstill. Of other varieties of hemorrhage which have been successfully combated by this remedy, we may mention uterine hemorrhage, in which it has been found that H_2O_2 solution injected into the interior of the uterus, or applied on strips of gauze, is sufficient to lead to a cessation of the bleeding. On the other hand, too much should not be expected of it. For example, it is highly improbable that internal hemorrhage, from the stomach or bowels, for instance, can be controlled by peroxide of hydrogen, because the solution must undergo decomposition long before it reaches a bleeding spot so remote.

After the excision of septal exostoses be certain that all fragments have been thoroughly removed from the nares, as their retention may give rise to marked irritation and even infection.

Indiscriminate and extensive removal of the turbinates is an inadvised procedure, in view of the important functions of these bodies. Gradual reduction by cauterization usually produces sufficient contraction to permit of free nasal breathing.

¹Dan McKenzie, M. D., C. M. The Hospital, April 4, 1908.

American Medicine

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The frightful pollution of the waters of New York Harbor can mean but one thing, the development of conditions sooner or later that will not only seriously affect the public health in the vicinity of New York City, but will greatly injure the shipping interests of a harbor that ought to be one of the finest in the world. Major Woodruff's timely article in this issue will interest every one of the thousands of physicians who are proud of the health, wealth and reputation of the largest city in the New World. The medical profession more than any other can stir thinking people to a realization of their sanitary shortcomings, and if there ever was anything that deserves serious thought it is the manner in which the Greater City of New York *fails* to dispose of its sewage.

Is insanity increasing or decreasing in frequency? The reports are so contradictory that it is difficult if not impossible to sum up the evidence. Current periodicals every now and then devote space to the alleged increase of insanity and one enthusiastic physician has predicted the time when the majority of our population will be insane, but all these articles have remarkably little basis in fact. The recent report of the Commissioners in Lunacy for England and Wales, discusses the

matter quite satisfactorily. One fact is certain,—the number of insane in confinement has been steadily increasing for many decades both here and in Europe, not only the actual numbers but relatively to population. In the opinion of quite a few of the statisticians, this does not necessarily indicate an increase of insanity, but is fully accounted for by the fact that a very large number are now in confinement who formerly were not considered insane, but merely eccentric, and who remained at large unless they committed crimes, when they went to prison or the gallows.

The longevity of the insane has greatly increased, and in the opinion of a few observers this factor is of itself sufficient to account for the increase of the asylum population. It is offset by the increased number of cures, but such curable types were very often not removed to an asylum, so that the offset is not probably very large. More rational treatment and proper feeding have preserved enormous numbers of cases. As a consequence the rate of increase was a mere temporary phenomenon and this last report shows a steady decline, so that it is safe to predict a time within a decade or two when there will be no relative increase in the asylum population, and the admissions will overbalance the cures and deaths by a small

amount proportional to the increase of population.

In some places insanity is said to be markedly decreasing and this conclusion is based on the number of yearly admissions per thousand of population. Nevertheless this statistical decrease may be an indication that the former unrecognized cases are about cleaned up and that we are now at the point where only the newly developed cases are taken in. The problem is thus a very difficult one to solve, and the proper conclusion from the data, is that insanity occurs just about as often as it ever did—no more and no less. Formerly the cases were short-lived from inhuman treatment, but now they survive many years in colonies, which have been increasing for this reason, but which will cease to increase when the population ceases its increase.

Some cases popularly called insane, are perfectly normal types of brain which differ in construction from the average—they are the “variations.” It is an invariable law in nature that if a species of animal develops one part to a great extent, say brilliant plumage in a bird, that part begins to vary enormously and in a short time there are a large number of varieties. Man has developed a far bigger brain than any other animal and it necessarily has produced a huge number of varieties too. Recently, that is within two or three thousand years, they have become noticeable, because they formerly perished. In primitive life all men were required to do the same kind of work, and their skulls in one locality show remarkable similarity.

Specialized brains are receiving more attention than formerly, and it is being accepted as a fact that a man may have one cerebral area so highly developed as to render him eminent in one respect, yet his general intelligence and judgments may be ordinary or even defective. He is quoted as an exception to the rule that intelligence depends upon the weight of the brain, for many of these cases prove on post-mortem to possess rather small brains. One French investigator some years ago proved that these variations are becoming more and more common as civilization advances. They are now needed in limited spheres while in previous stages of culture they were forced to the wall in the struggle for existence in which there was nothing they could do,—except become parasites on some man of ability. Modern brain studies seem destined to revise many old-time notions. Men once may have been equal, but in time no two will be alike mentally when civilization will be the “orchestration of specialists.”

The relation of perception to intelligence is another new investigation carried on by Van Biervliet, the Dutch physiologist. He finds that there is a “quality” as well as “quantity” which modifies but does not nullify the rule that intelligence depends upon the brain weight—the rule recently confirmed, by the way, by Vachive and Pelletier, (*Cosmos*, May 12). More connections and better material enable the intelligent man to see and hear more than the less endowed. We notice this fact when observing the imbecile or feeble-minded, but it is a new discovery that it is an universal phenomenon. Van Biervliet finds that in men of recognized

ability, the powers of seeing and hearing are measureably acuter, though no rule could be discovered as to the sense of touch.

Practice may modify any sense, but it does not originate the acuteness which is shown by the congenitally endowed artists. If this new generalization is subsequently confirmed by others, it will be possible to grade men by careful tests of the acuteness and serviceability of their special senses—the sources of the knowledge which the brain works into higher concepts. Our great men then have great heads as a rule, and are able to see more than the rest of us, and to form more and better opinions. Had we not better listen to men of authority more than we do? Perhaps they may know more than we after all. Must our government be in control of leaders and guides—or are all officials to be servants obeying the will of the stupid voters? New discoveries in brain, anatomy and physiology may modify our views of the proper form of government for this great hodge-podge of people.

The hospital problem is bound to call in the near future for serious attention on the part of thinking medical men. No one can deny that the development of medical eleemosynary institutions has been largely responsible for the progress of medical and surgical science. But coincidental with the growth of the hospital idea, grave dangers to the rank and file of the medical profession have appeared. In most communities wherever one finds a hospital, there also will one find a small *clique* of medical men enjoying especial advantages and privileges by virtue of their

hospital connection. Their less fortunate and influential colleagues are denied these advantages, and are proportionately handicapped in the practice of their profession. Since to send patients to such institutions is tantamount to losing their patronage nine times out of every ten, the “outside” practitioner naturally discourages hospital treatment except as a *dernier ressort*. A case, even though a charity one, may be exceedingly interesting and the attending physician may wish to gain all possible experience from its observation and study. If he is not a member of the hospital staff, however, his connection with any case ceases when it enters an institution. All these things tend to defer the well recognized benefits to be derived from hospital regimen, and it is a notable fact that hospital cases are usually advanced—not infrequently too far advanced. Therefore, if hospitals have not fulfilled their most complete function in any community, the reason can usually be found in rules which confer special advantages on a few medical men and rigorously deny any privileges to those outside the “charmed circle.”

No reflection is intended on those fortunate medical men who hold hospital appointments. With rare exceptions such men are well chosen, they are capable and honorable, and would scorn to purloin their colleagues' patients. But there are psychologic factors involved in the treatment of a patient in a hospital by a physician or surgeon enjoying the prestige of official appointment, and any patient who passes successfully through the ordeal of a surgical operation or serious illness, is pretty apt to focus his gratitude, regard and

confidence on the medical man who attended him. This is natural and involves no wrong, but when the attending physician or surgeon is an active competitor of the colleague who sent the patient to the hospital, to have the patient forsake the old for the new, not only creates a difficult ethical situation, but works a hardship on the original physician. Had the latter had the same opportunity, in all probability he would have equally proven his skill and worthiness.

Another objectionable feature of limited staff appointments is found in the fact that too few men can have access to the opportunities afforded by hospitals for increasing individual proficiency in the technic of diagnosis and treatment. Such a system therefore tends to elevate the few at the expense of the many, whereas the ideal professional situation in any locality is a community of interest with "equal rights for all and special privileges to none." The practice of medicine is not a soulless scramble for wealth and power, but a vocation for earnest men who must constantly and unflinchingly seek the highest possible efficiency in order to do the greatest possible good.

The ideal hospital system, and one that sooner or later must be adopted, is that which offers to every medical man the opportunity of placing his patients in any hospital he or they may elect, there to treat them with all the freedom that is his as a legally qualified practitioner of medicine. No fear need be entertained as to the effect on any hospital's statistics. Talents and skill will win out just as they do in private practice, but giving equal hospital privileges to every physician and

surgeon cannot fail to work for the general elevation of all. The benefits that will accrue to the afflicted are immeasurable, for instead of being the last resort, a sojourn in a well equipped hospital will be the general custom, especially in the management of infectious or contagious diseases. Hospitals will then become in reality what they were originally intended to be, institutions solely for the use and welfare of the public, and not institutions for the promotion of private gain, professional or otherwise, as under present conditions is too often the case.

The question of food preservatives is rightly engaging the attention not only of the captains of many large industries, but of our scientific men as well. It takes no very great familiarity with the situation to recognize very grave abuses to which the use of food preservatives must inevitably tend. That such abuses have become a considerable menace to the people is certain, and if only half of the evils that have been exposed had existed, there would still have been ample reason for the wave of indignation that has swept over the country. Truly it was high time for a National Pure Food Law to control the avarice of those manufacturers—fortunately few—whose instincts place them on the same social plane as the ghoul and grave robber.

But let us not shoot into the crowd! Popular indignation is all too easily converted into unjust prejudice and unjust prejudice instead of hitting the real mark, too often overshoots, and injures the innocent. In correcting the food and drug evils there surely must be some better way

of conquering the "cancer" than by killing the patient. In other words it is not too much to ask that the machinery of the law shall be delicate and accurate enough to punish the guilty without working a hardship on the innocent. Otherwise the law itself becomes a culprit, and one of the most important of the fundamental principles of good government—the protection of the law abiding—is lost. It is all too evident that impulsive and indiscriminate attacks on the part of intemperate reformers, however well meaning, may only serve to substitute greater for less evils. Innumerable industries are today staggering under the needless handicap of unmerited suspicion, when a little tact would have converted them into the strongest possible allies of the current movement. The one thing that the reformer rarely remembers is that he himself is fashioned of the same clay as his fellow-men. Consequently as he hermetically seals his supply of the milk of human kindness and gives full sway to suspicion, criticism and intolerance, the *possible good* from his efforts is too often qualified by the *probable harm*.

Specialism and Specialists.—There was a time—and that not so long ago—when the specialist was the product of a gradual evolution from the general practitioner. He was not ready-made, as is now unfortunately so often the case; but after serving a more or less prolonged apprenticeship in general medicine he took up some special line of work because of a predilection for it and a natural or acquired aptitude for its performance. Nowadays we see many a young graduate look with disdain upon the career of a general practitioner; nothing will satisfy him but to start as a full-fledged

surgeon or gynecologist, or some other species of "ist." Is it any wonder, then, that the physician is apt to regard specialism as a menace to his own broader field of usefulness?

The surgical fledgeling, whose education has been acquired in a post-graduate course of instruction, and whose sole conception of treatment is summed up in a cutting operation, is all too common. Unlimited assurance—such as ignorance often confers—and business ability may give him an undeserved prominence in a community; but viewed in his true light he is a disgrace to the specialty he professes to follow, and to him is attributable no small share of the distrust on the part of the physician towards surgical modes of treatment in internal diseases.

From what has been said the inference must not be drawn that the surgical aspirant of the present era must have devoted many years to general medical practice before taking up his special line of work. Life is too strenuous nowadays for such an evolution, however desirable it may be in some respects.

But the profession has the right to demand—and so has the public—that no one shall be entitled to practice general surgery until he has fulfilled certain fundamental requirements, and these, at the minimum, should consist of an internship in the surgical service of a hospital and an adequate term of clinical work under supervision of a competent surgeon, at least as regards major operative technic.

Every one who reads the signs of the times is aware that much more will be required of the coming generation of sur-

geons than mere technical skill. The days of thrilling exhibitions of operative dexterity are passed. The leaders in modern surgery are not only good operators but equally good diagnosticians; they know not only *how* to cut, but *why* to cut. This development of diagnostic acumen cannot fail to act as a wholesome check to reckless operations and to unnecessary exploratory procedures. It gives assurance to the practitioner that a surgical consultation means something more than resort to the knife—that he will not be superseded in the management of the case unless the conditions so demand. Thus the surgeon will become not so much a specialist as a physician who knows how to use the knife.

The increasing mortality among city business men has been noticed for a long time, but strange to say the probable cause has not been mentioned. The phenomenon is attributed to the "quick lunch," "exposure," "carelessness" and every other conceivable condition which has existed as long as man himself. He has always had a higher death rate than woman because of his fighting duties in the protection of family, tribe or nation. When infanticide was practiced it was usually confined to female infants, and the boys preserved as food for war, for the women did all the real "work." In spite of this, polygamy was possible because of the still greater adult male mortality. Yet it is being discovered that modern life is actually as bad as war in eliminating the males. City life replaces war as a life destroyer for it is probably true that the unwholesome environment of

sky-scrapers and narrow streets with the inevitable bad air and overheated air, and the excessive glare of summer—all proved causes of nervous breakdown—are at the basis of city mortality. The women can live in the suburbs, protected from the dangers daily inflicted on the husbands in this modern form of war. The dangers of the struggle for family existence should fall on the men, but whether the conditions are becoming a menace to society is a question too remote for scientific discussion. At any rate the conditions are not wholly remediable, and everyone should keep out of the city as much as he can.

False certificates of death in cases of Christian Science treatment have been freely alleged in the daily press. It is charged that certain physicians make a practice of signing such certificates,—for a consideration,—even when they know nothing of the case and have not been called in until the patient is moribund or already dead. We hope the practice will cease if it has really existed, for public policy demands legal investigation of every death where qualified physicians have not investigated the cause. The coroner's duty is not an anachronism by any means, and physicians must not be instruments whereby murders are concealed. It is quite possible for such crimes to be committed and then hidden under the cloak of an assumed Christian Science treatment,—accepting the alleged diagnosis and signing a certificate of death by natural causes, whereas it might be a real case of death by poison or violence.

TUBERCULOSIS OF THE TONGUE.



Illustration shows ulceration at the tip of the tongue and higher up on the dorsum a number of miliary tubercles.

**TUBERCULOSIS OF THE MUCOUS
MEMBRANE OF THE MOUTH**

BY J. CLARENCE SHARP, M. D.

(page 385)

ORIGINAL ARTICLES.

TUBERCULOSIS OF THE MUCOUS MEMBRANE OF THE MOUTH.

BY

J. CLARENCE SHARP, M. D.,

New York City.

Although no subject today is receiving such close attention and study as tuberculosis, very little has been written about tuberculosis of the mucous membrane of the mouth. Indeed, in looking over the latest literature bearing on the subject, I have been surprised to find how seldom this particular manifestation of the disease is mentioned. This, no doubt, is due to its extreme rarity, a fact which is most fortunate for the community. We look upon a patient with tuberculosis of the lungs as a menace to society, but how much greater is the danger of infection, if the patient is suffering from tuberculosis of the upper air passages. The higher up in the air passages the location of the ulceration, the greater the danger both to the patient and to every one with whom he comes in contact, because inflammations of the mucous membrane produce an increase in the secretions, and with every cough thousands of the tubercle bacilli are thrown off. Even in ordinary conversation infinitesimal particles of saliva are constantly being ejected.

The mouth and pharynx are very seldom attacked by the tubercle bacilli and this accounts for the difficulty the general practitioner has in making a diagnosis, especially when the lungs fail to show an active tuberculous process. In all the cases I have seen the disease has developed in patients who have not extensive pul-

monary tuberculosis, a fact which in itself is peculiar.

Why one patient in apparently good health develops a tuberculous ulceration on the tongue or on the soft palate at about the same time the disease appears in the lungs, and hundreds of other patients with large deposits in the lungs never develop the disease in the upper air tract no matter how anemic the mucous membrane may become, is a matter of conjecture.

There is no form of ulceration in the upper air passages that so closely resembles tuberculosis as syphilitic ulceration. In fact, the two may quite readily be confounded. A specific ulceration may look so much like the tuberculous process, especially when the ulceration is in the soft palate, that it is almost impossible to make a differential diagnosis without the aid of the microscope. On close inspection, however, the mucous membrane will be found to be very much less infiltrated and of lighter color in tuberculosis than is the case in syphilis.

In tuberculous ulceration of the tongue, there is practically no infiltration, and here also the ulceration may have the appearance of syphilitic ulceration. Consequently unless the patient has tuberculosis of the lungs, or gives a positive history of syphilis, the microscope may have to be called to our aid to clear up the diagnosis. I have never seen a tuberculous process attack the tongue except at the tip or just under the tip. This can be readily explained by the constant irritation to which the tip of the tongue is subjected.

One would think that the base of the tongue with the follicles of the lingual tonsil would be a place for germs to lodge, but I have never seen a tuberculous ulcer-

ation develop here, although it is quite a favorite place for gumma. I have no doubt that the tubercle bacilli often enter the system by way of the large crypts in the tonsil; still very few cases of tuberculosis of the tonsil are reported. It is difficult to say why a tuberculous deposit should form on such a perfectly smooth surface as the soft palate. The tongue and tonsils are very much more exposed to infection, and that the tubercle bacilli do pass through the tonsil is strongly evidenced by the frequency of cervical tuberculous adenitis. The tonsils in these cases remain unaffected and the large glands will often disappear on removal of the tonsils. In tuberculosis of the pharynx, it is readily seen how the germ could enter the small follicles, especially if the patient is suffering from a follicular pharyngitis.

I well remember the first case of miliary tuberculosis of the pharynx that came under my care, about twelve years ago, that of a young woman with a history of sore throat, fatigue and afternoon temperature. On examination of her pharynx, small white deposits could be seen under the mucous membrane, about the size of bird shot. Her temperature was 104° in the mouth, she had no cough, and on examining the lungs no lesion could be found. She had no expectoration, and it was not until she had made several visits that we ventured to make a diagnosis of tuberculosis.

The increase of the deposit could be watched from time to time, and it was several weeks before the deposit began to break down. Soon after this the lungs showed signs of involvement. Fortunately she died before the whole pharynx was

ulcerated. I do not look upon this as a case of primary infection of the pharynx, although there is no reason why the germs could not enter by way of some abrasion of the mucous membrane.

Case 1. J. R., age 41—Cigar clerk—came to my clinic at the Presbyterian Hospital, April, 1903, because of a sore he had on the tip of the tongue. He first noticed a cough in February 1903, but paid no attention to it. Did not consult a physician. The tongue had been sore about three weeks. Patient was small of stature, anaemic, and had been losing weight. Family history good; never smoked. Lungs showed disease in left apex and in scrapings from the tongue tubercle bacilli were found. The tongue showed a small white ulceration at the tip, irregular in shape, with no hardness of the surrounding parts. Higher up on the dorsum were a number of miliary tubercles. The patient died six months after he first noticed cough, and four months after the tongue became sore. The ulceration extended very little during the four months I had charge of him.

Case 2. C. R., age 37—Came to see me in February 1902. Had been having cough since last fall when he had a very bad cold. Examination of lungs showed marked dullness over left apex. Pharynx, larynx and pharyngeal vault normal. Nose: large ridge running full length of right septum and in contact with upper portion of inferior and lower edge of middle turbinates. This ridge was removed in June, giving him a fine breathing space. Sent him to the mountains first of July, and when he returned the first of September, cough had disappeared. He had gained in weight, and the left apex appeared to have healed.

I did not see him again for one year; when he returned, saying he had not been well for several weeks, and complained of having tonsillitis and a husky voice. *Examination.* Left tonsil is studded with small white points, some of which were broken down. On soft palate were seen several small white nodules, one of which had broken down.

Larynx: Arytenoids were edematous, grayish white in color. Lungs showed an active tuberculous process again in left apex. Scrapings from the ulceration or pharynx contained tubercle bacilli. He was at once sent to the mountains. I saw him three months later and found both ulcerations of the tonsil and palate much improved. Soon after this he saw a physician in the mountains, who said a mistake had been made and that he had syphilis instead of tuberculosis. He was put on iodid of potassium and sent home, with the advice that he would do just as well at home. I did not see him for some time after his return. When he came to me, the ulceration of the soft palate and tonsil had increased some in size, and gradually enlarged, until he died just six months after the diagnosis of tuberculous ulceration was made.

In tubercular ulcerations of the upper air passages, the glands around the neck and mouth show very little infiltration, and this is especially the case where the ulceration is confined to the tip of the tongue. And even when the ulceration was extensive as in Case 2, where the soft palate and tonsils are involved, practically no infiltration was noticed. This may be due to the fact that the slow extension of the disease allows the glands to become immune, as it were, to the infection. Males seem to be more prone to the disease than females. Whether this is due to the irritation caused by drink or smoking, I am not able to say.

Treatment. Very little can be done for these cases. The mountains no doubt are the best place for them and the food should be such as can be swallowed without much mastication.

I disapprove very strongly of any local treatment, because the applications cause annoyance to the patient and irritate the ulcer.

Beechwood Creosote, which is of so much benefit in certain forms of tuberculosis of the larynx, is of absolutely no help here.

Injections of tuberculin have been tried, but so far as I can learn, with no beneficial results.

Fortunately, there is very little pain with the disease; it is simply an annoyance, but I have never seen any one live longer than from four to six months after the first appearance of the ulceration.

POLIOENCEPHALITIS INFANTILIS.¹

BY

E. KIRKLAND SHELMEERDINE, M. D.,
Philadelphia, Pa.

For the purpose of bringing out the points in this case, it may not be amiss to go over the symptoms of the diseases which under various names have their lesions in the region of the 3rd and 4th ventricles of the brain.

Polioencephalitis superior (ophthalmoplegia progressiva, nuclear ophthalmoplegia). Wernicke first described this disease in 1881 and gave alcohol as the etiological factor. Other writers have attributed it also to influenza, pneumonia and diphtheria. Prodromes of headache, vertigo and insomnia usher in the more typical symptoms. The external muscles of the eyes are involved with partial or complete ptosis; in severe cases there are paralyzes of the external muscles, optic neuritis, and in some cases there are paralyzes of the ciliary muscles and of the sphincters of the iris. The mental symptoms are allied to alcoholic intoxications with ataxia of gait, faulty speech and tremors.

¹Read before the Germantown Branch of the Philadelphia County Medical Society, March 5, 1908.

Polioencephalitis inferior (bulbar paralysis). When this occurs with polioencephalitis superior, it is usually secondary to the preceding and is characterized by the involvement of the 10th and 12th cranial nerves causing difficulty in phonation and deglutition.

A number of cases of polioencephalitis in individuals past infancy have been described, but I have been unable in medical literature to find a case of such a young infant as I herewith report. I believe this to be the first case of the kind published and I have taken the liberty of calling it polioencephalitis infantilis to distinguish it from other cases of polioencephalitis which occur in adults and from which it differs in symptoms. In the published cases of polioencephalitis, the paralyzes and mental disturbances are the prominent symptoms, but there must have been an initial stage when there was an excitation of the centres. The irritative stage in an adult may not have caused any marked objective symptoms, but in an infant whose nervous system is highly sensitive to toxic influences, it could produce marked objective spasmodic contractions of the muscles supplied by the nerves arising from the nuclei located in the, if I may use a Johnsonian expression, "toxicated" parts of the brain.

Case:—Infant, male, 2½ months old. Mother developed a severe case of la Grippe, child was nursed at the breast for a week following the attack, at the end of which time he was put on a modified milk mixture for the reason that he was unable to retain the breast-milk. At this time he developed peculiar attacks; he would become apparently unconscious, the eyes would roll around in his head and describe various inco-ordinate movements; sometimes both eyes would start from the inner canthi and describe circles upwards and outwards, at the end of these movements

there would be a complete external strabismus with each eye in the external corner and pointing upwards; again there would be associated movements with the eyes moving in various directions; sometimes the movements would start with the eyes looking directly downwards. After the movements ceased, the eyes would become stationary in extreme rotation upwards and slightly outwards on both sides; this immobility would last for a variable time, from a few minutes to three hours. After the eyes had become fixed, the lids would be about two-thirds closed and the lower level of the iris would be on a level with the border of the upper lids. During the spasmodic action of the eyes there would be a twitching of the upper lids. At the beginning of an attack the pupils would contract to pin-points and remain so until the unconscious period had passed, when they would suddenly dilate. Early in the attack the corners of the mouth would elevate and cause twitching smiles. The skin all over the body would assume an opaque, white, waxy hue—the color of skin noted in dead babies. The respiration would become extremely shallow and slow. The heart beats were somewhat slower and fuller but regular. At no time was there any elevation of temperature, on the contrary there was a sub-normal temperature of from one-half to one degree. There was a bronchitis, for a few days, which subsided upon the administration of a simple cough syrup; between the attacks, there was marked dyspnea and labored diaphragmatic action. The bones of the head were not closed and no bulging could be observed, either during the attacks or in the intervals between the attacks; pressure on the anterior fontanelle caused no discomfort or symptoms. No Babinski reflex.

Eight days after the mother developed symptoms of la Grippe, the infant had the worst attack, for three hours he lay in an unconscious condition; to a casual observer he would have been pronounced dead, the respirations were so shallow as to be scarcely perceptible to the eye, this condition in conjunction with the extreme waxy appearance of the skin gave the impression of death. Hot mustard baths

would arouse him out of the stupor but he would immediately sink back into the same condition again, stimulants had apparently no effect whatever. The attacks have gradually decreased in severity until at the present time (six weeks later) there are several slight, transient ones for a few days in succession followed by a remission for from twenty-four to forty-eight hours. Now when he lapses into unconsciousness, there is a slight elevation of the eye-balls with pin-point pupils. The pin-point pupils have always been a prominent and marked symptom; the pallor is not as deep as it was in the beginning. Hemoglobin is 85 per cent.

Final Note:—Three months after the first attack—He is still slightly anemic and when there is an intestinal disturbance, he will have a suspicion of an attack, there will be a contraction of the pupils and some tremor of the eye-lids and corners of the mouth; he can be instantly aroused by pinching the back of his neck.

Alcohol taken internally in small quantities acts as a stimulant; in larger quantities the effect is depressing and finally there is stupor and relaxation with a temporary muscular paralysis, when the subject arrives at the stage of what is known in the common vernacular of being "dead drunk." So with many poisons taken internally there is first a stage of irritation (stimulation), followed by depression. Alcohol or the toxins of influenza, diphtheria or pneumonia, as some writers claim, are the causes of polioencephalitis superior, and act by first stimulating and later depressing; the intoxication may be so overwhelming that the period of stimulation or irritation is very evanescent, or the causes do not come under observation until sufficient symptoms have developed to cause the patient to consult a physician. In an adult there may be no marked symptoms present during the period of

irritation but in an infant whose nervous system is extremely sensitive to poisons, the symptoms could be quite marked, as for example in the convulsions of infants due to the absorption from the intestinal tract of toxins formed during digestive disturbances.

Hirst cites a case of a mother who witnessed the sabering and murder of her husband; a short time after this occurrence she put her baby to the breast where it suckled for a few minutes and then promptly died. The nervous storm through which the mother passed undoubtedly generated toxic materials which gained access to the milk with fatal results to the child. This case is somewhat analogous to the foregoing; here is a very young baby whose mother's milk was loaded with the toxins generated by the influenza bacilli; who was poisoned from the breast for a week after the development of symptoms in the mother; and who, possibly, was extraordinarily susceptible to the influenza toxin. Poisons have a predilection for certain parts of the body and also a selective action for certain parts of a functional system which seem histologically and chemically homogeneous. For example, wood alcohol attacks the centres and nervous prolongations concerned in vision; while ethyl alcohol is blamed as a cause of polioencephalitis superior. The mechanical or chemical reasons for such predilections have not been fathomed as yet, but the fact remains that certain substances when taken in the system will often cause damage to certain parts of the nervous system and certain organs.

Beneath the floor of the aqueduct of Sylvius are the origins of the nuclei of the 3rd nerves; passing on down to the

floor of the 4th ventricle are found the nuclei of the successive cranial nerves. The 3rd, 4th and 6th cranial nerve centres control the external muscles of the eye. In this case there were various irregular movements of the eye-balls which were undoubtedly due to a discharge of nervous energy arising in the nuclei of these nerves; finally when deep unconsciousness ensued the eyes became set in upward and outward rotation—a relaxed condition from exhaustion of the nerve centres controlling the external eye-muscles, and following the excessive discharge of nervous energy. The marked contraction of the pupils was caused by unusual stimulation of the filaments in the 3rd nerve supplying the sphincters of the iris (ciliary fibres), and which are concerned in the contraction of the pupils; the dilator (radiating) fibres come from the sympathetic; stimulation from the floor of the 4th ventricle would cause contractions of the pupils.

A branch of the 5th supplies the risorius muscle; the corners of the mouth twitched at the beginning of an attack.

The pneumogastric nerve acts as a balance wheel to the respiration; severing this nerve in the dog causes an increased rate of breathing; stimulation, on the other hand, of the distal cut end causes a retardation of the breathing rate. Part of the medulla which bounds part of the 4th ventricle is the prominent vaso-motor centre in the brain, according to Foster; stimulation of this part would cause a constriction of the superficial capillaries of the skin. The heat centres in the brain are closely associated with the vaso-motor centres,—if the vaso-motor centre is not in itself the heat centre.

The picture of spasmodic muscular actions of the eyes, marked pupillary con-

traction, twitching of the corners of the mouth, constriction of the superficial capillaries of the skin, subnormal temperature and shallow respirations, point to an interference of the normal functions of the centres closely associated anatomically in the region of the 3rd and 4th ventricles of the brain. The history of an acute infectious disease in the mother and the toxic symptoms rapidly developed in the child point to a toxemia and an intracellular disturbance of the centres governing the peripheral parts concerned in the symptoms enumerated. There is undoubtedly a mild inflammation of the centres which are responsible for the symptoms; the gradual lessening of the symptoms shows a subsidence of the irritation and makes the prognosis of the case hopeful. Iodides have been given for the purpose of absorbing any deposits of lymph which might be present.

SOME PRACTICAL POINTS IN MICROSCOPIC EXAMINATION OF THE URINE.¹

BY

L. W. BREMERMAN, A. M., M. D.,
Chicago, Ill.

Microscopic examination of the urine is of great importance, for the knowledge thus obtained enables us to arrive at an accurate diagnosis of many otherwise obscure pathological conditions.

A specimen of urine should be allowed to stand in a cool place for about twelve hours, for sedimentation. I use this method in preference to the centrifuge, for centrifuging breaks up the elements, thus making it often more difficult to come to a definite conclusion. After the sediment

¹Read at the October meeting of the Chicago Urological Society.

has been deposited the overlying urine is decanted and the residual portion poured out into a clean watch crystal.

With a small camels hair brush, a drop is transferred to a slide and covered with a $\frac{3}{4}$ inch cover glass. The cover glass must exactly cover the drop and not float. After the mount has been carefully made, it is placed on the stage of the microscope under a one-sixth lens, with a concave mirror; the Abbe condenser out; and with the iris diaphragm almost closed, using a one inch eye piece. Care must be taken in studying each slide not to overlook any important details and one should cultivate the ability to recognize one and all of the elements present, whether normal, pathological or extraneous.

I will not have time to discuss the normal elements but will dwell for a few moments upon those which are pathologically significant, namely; the *pus cells*, *red blood corpuscles* and *epithelial tissue*.

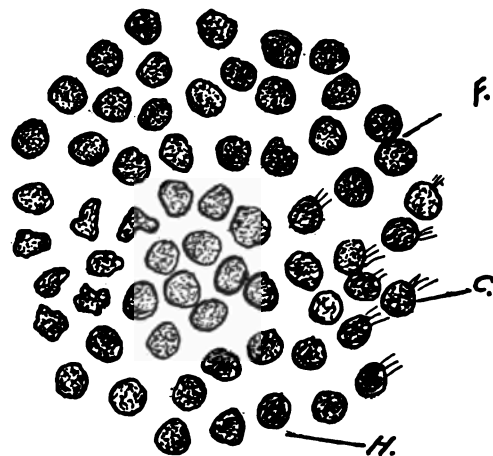
PUS-CELLS.—Urine containing pus corpuscles even in infinitesimal amounts is indicative of an abnormal process somewhere in the genito-urinary tract. If few in number, they may point to simply a slight irritation in some portion of the tract, rather than an inflammation. If they are present in moderate numbers the diagnosis of an inflammation may be made, the severity of which is directly proportional to the number of pus cells. When present in very large numbers together with features which I will speak about later, a diagnosis of active suppuration or ulceration may be made. Urine containing a small number of pus corpuscles may appear perfectly normal to the naked eye; the greater their number the more opaque it becomes and in a urine in which they are

abundant a heavy cloudy sediment will sink to the bottom in a few hours.

Every specimen of urine containing pus even in very small amounts, contains albumin, no matter what part of the tract is involved and the amount of albumin increases directly in proportion to the pus. The pus-cells or leucocytes take their origin not only from the connective tissue cells but also to a great degree from the epithelial cells. They appear mostly as small, round granular bodies about twice the size of normal red corpuscles in which one or more nuclei may or may not be seen.

In freshly passed urine they infrequently exhibit ameboid changes and are hence seen in a variety of irregular forms. The drawing represents the different varieties.

FIG. I.



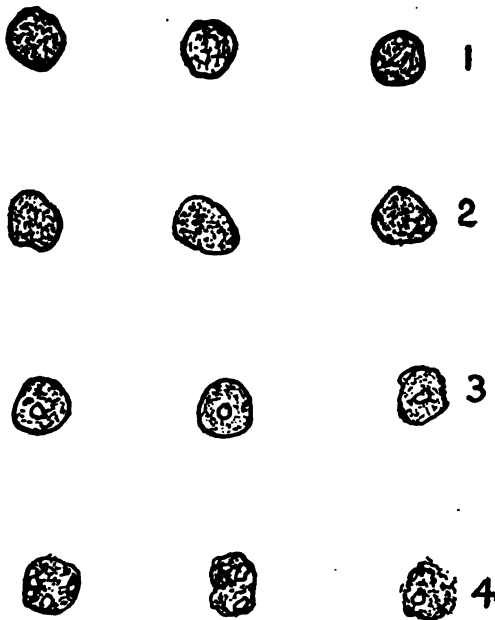
Pus Corpuscles (1 X 500).

- F. Pus Corpuscles containing Fat Globules.
- C. Ciliated Pus Corpuscles.
- H. Pus Corpuscles containing Crystals of Haematoidin.

The apparent presence or absence of nuclei depends entirely upon the amount of granulation; in coarsely granular corpuscles they are invisible, but become well

marked when the granulation is fine. The nature of the granulation present in the pus-cell will inform us as to the constitution of the individual. This fact was first announced by Carl Heitzman in 1880. Coarsely granular, nearly homogeneous corpuscles, without any apparent nucleus show an excellent condition. The drawing will show what I mean by the character of the granulations.

FIG. II.



Pus Corpuscles Showing Different Constitutions.
(From Heitzman).

- | | |
|---------------|------------|
| 1. Excellent. | 3. Medium. |
| 2. Good. | 4. Poor. |

Pus corpuscles may be, as I have said, derived from any portion of the genito-urinary tract and their source can only be determined by the nature of the epithelial tissue present in the urine. I may mention here that occasionally small fat-globules

and granules appear in the pus-cell, and this fatty change is indicative of chronicity of inflammation.

BLOOD.—I will say only a few words concerning blood in the urine. Its presence even in microscopical amounts is indicative of a pathological lesion somewhere along the tract. The appearance in the urine of red blood corpuscles is so characteristic and so well known that I will not dwell on the subject only to say a few words relative to the method of diagnosing the exact location of the lesion that is causing the haematuria.

To accomplish this one must know the use of the examining and catheterizing cystoscope—for with these instruments the course of bleeding may readily be ascertained; if the bleeding is renal in origin, catheterized specimens of urine from each kidney should be collected and these thoroughly examined microscopically. This will not only inform us as to the extent of the pathological lesion of the diseased kidney but will show the condition of the other kidney.

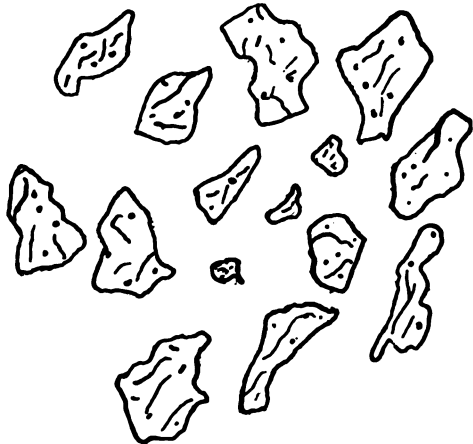
EPITHELIUM IN THE URINE.—The epithelium found in the urine is exceedingly important owing to the fact that its presence is always significant of a pathological condition. The exception is a few epithelial shreds from the bladder, and in females, from the vagina.

There are three kinds of epithelial cells found in the urine, flat, cuboidal and columnar. The drawings which I have made of the samples of urine will show the different characteristic cells. The arrangement of the epithelial tissue in the urogenital tract is either in single or stratified

layers; all three varieties of cells occur, the flat in the upper layer, the cuboidal in the middle layer and the columnar in the inner next to the connective tissue.

All epithelial cells are granular with one or more nuclei which may or may not be seen. The granulations are either coarse or fine. The flat are finely granular, the columnar coarsely granular and the cuboidal have a degree between the other two. Care must be taken not to mistake epidermal scales for epithelial cells; these are derived from the prepuce in the male and the clitoris in the female, also from the fingers in handling slide and cover glass; they are highly refractive with jagged contour and do not contain nuclei.

FIG. III.

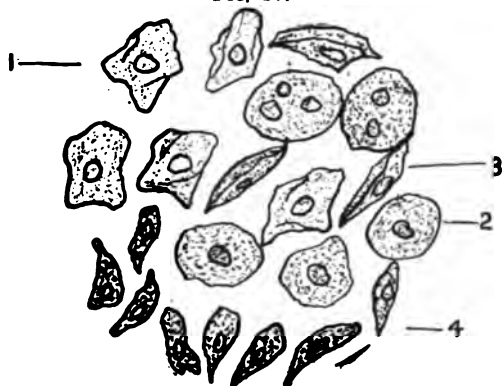


Epidermal Scales.

The epithelial cells from the bladder are of three distinct varieties, and are easily recognizable; these are flat cells from the upper layers, cuboidal from the middle layers and columnar from the deepest layers.

Epithelial cells from the middle layer are never found in normal urine and when present in moderate or large numbers with many flat cells from the upper layers, the

FIG. IV.



Epithelial Cells from Bladder.

- | | |
|------------------|------------------------|
| 1. Upper Layer. | 3. Upper Layer Folded. |
| 2. Middle Layer. | 4. Deepest Layer. |

diagnosis of an acute process can be made. If on the other hand, cells from the upper layers are scanty or entirely absent, the process is a chronic one. Epithelial tissue from the deeper layers is found only in severe processes, such as intense inflammation, ulceration, hemorrhage or tumors. The epithelium from the pelvis of the kidney varies considerably in shape, being part globular but mostly irregular. The cells are smaller than those from the bladder but larger than those from the ureters; the cells from the ureters are almost always present with those from the pelvis. The majority of pelvic epithelial cells are caudate, pear shape or lenticular, though they are sometimes quite irregular. The pelvic epithelia may be frequently seen with uric acid gravel, which has produced an inflammation or an irritation of the pelvis.

Epithelial cells from the ureters are rarely found alone but usually accompany those from the pelvis. Their characteristic shape in urine in most cases is round, globular or slightly irregular, being distinctly smaller than those from the pelvis. The epithelium from the uriniferous tubules is the most important of all found in the

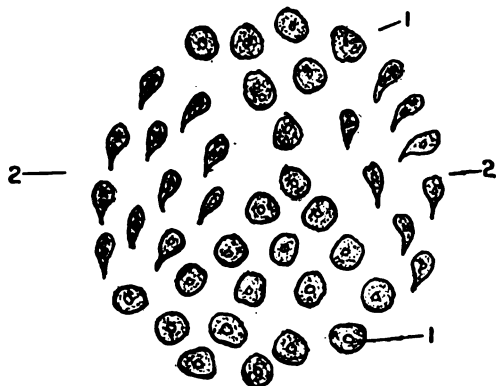
FIG. V.



Epithelium from Pelvis of Kidney and Ureter.
P. Pelvis of Kidney.
U. Ureter.

urine and the most frequently overlooked. When these epithelial cells are present in the urine with pus cells, even when no casts whatever can be found, the diagnosis of a pathological process in the kidney is certain, since they are never seen in normal urine. Two distinct varieties are seen, the cuboidal from the convoluted tubules and the columnar from the straight collecting tubules. The cells are distinctly smaller than either those from the pelvis or the ureter in the same case. They are round, globular and slightly irregular. These epithelial cells in size are about one-third larger than the pus cells found in the same case.

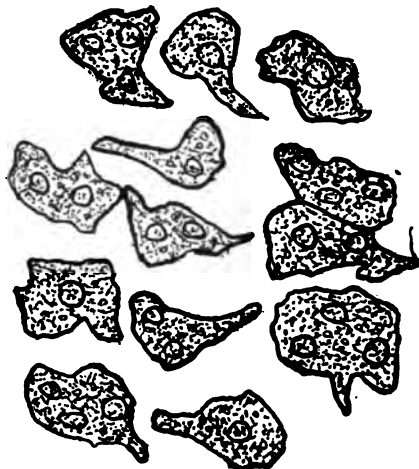
FIG. VI.



Epithelium from Uriniferous Tubules of Kidney.
1. Convoluted Tubules.
2. Straight Collecting Tubules.

Epithelial cells from the urethra vary considerably in size and shape, being partly flat, partly cuboidal, but in most cases they are comparatively large and irregular so that they can be easily identified.

FIG. VII.



Epithelium from Urethra.

Epithelial cells from the prostate are partly cuboidal and partly columnar and almost twice the size of pus corpuscles. The drawing not only shows the appearance of the epithelium from the prostate but from the ejaculatory ducts and seminal vesicles as well. Some of those from the ejaculatory ducts are ciliated, as may be seen in illustration.

Having spoken of the more common varieties of epithelial cells found in the urine, I will spend the balance of the time allotted to me in discussing the characteristic microscopic appearance of the urine in some of the more frequent urinary disorders, namely:

Acute catarrhal pyelo-nephritis.

Chronic catarrhal pyelo-nephritis.

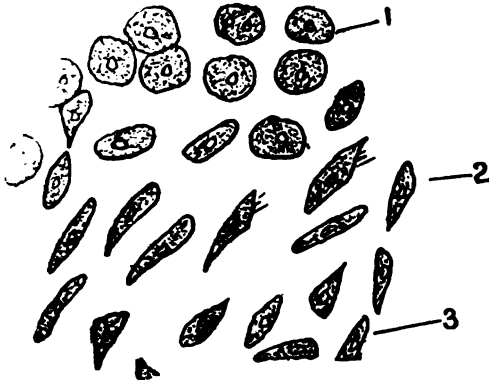
Acute suppurative nephritis with catarrhal pyelitis.

Lithemia with sub-acute catarrhal pyelitis and cystitis.

Acute catarrhal cystitis.

...stitis.
...cystitis.
...cystitis.
...in the bladder due to
...bladder.
...stitis with hypertrophy of

FIG. VIII.



Epithellum from Prostate, Seminal Vesicles and Ejaculatory Ducts.

1. Prostate. 2. Ejaculatory Duct.
 3. Seminal Vesicles.

In connection with the description of the microscopical picture of these various conditions I will dwell briefly upon the clinical symptomatology and the chemical features found in the urine.

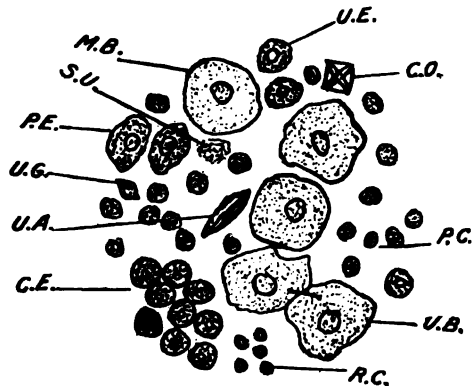
In *catarrhal pyelo-nephritis* the symptoms vary in proportion to the severity of the disease. In mild and early cases there is anemia, headaches, pain in the back, loss of appetite and general depression and insomnia. The acute form may develop at any time of life, while the chronic type usually occurs after the age of forty. In the chronic cases the symptoms are more marked. There is marked loss of weight, dyspepsia, the gastric disturbance producing not infrequently grave emesis; the pulse is tense, hard and full. Albumin makes itself evident only in small quantities and in many cases amounts to barely a trace.

In acute cases the specific gravity is usually somewhat higher than normal, the color more pronounced and the total amount slightly decreased. The urea is usually increased. In chronic cases on the other hand the amount of urine is increased with a pale color and low specific gravity or relative decrease of the salts in the total amount of a twenty-four hours' specimen, and a marked diminution of the urea.

It is at times exceedingly difficult to accurately diagnosticate this condition and many times is it only possible after a careful microscopical analysis.

In the acute form there are present in most cases large numbers of pus cells and epithelial cells from the convoluted tubules of the kidney, together with red blood corpuscles in varying amount. There are crystals of calcium oxalate, uric acid and sodium urate. The severity of the condition

FIG. IX.



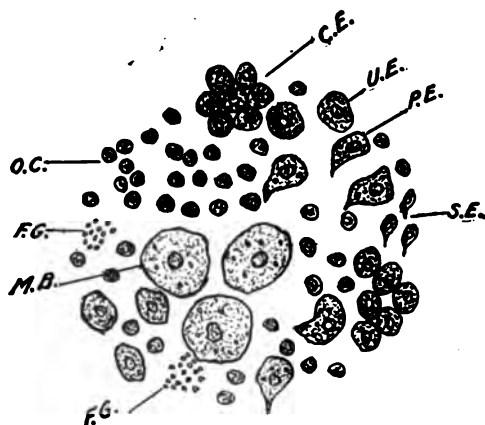
Acute Interstitial Nephritis and Cystitis. (Acute Catarrhal Pyelo-Nephritis).

- R. C. Red Blood Corpuscles. P. C. Pus Cells.
 C. E. Epithellum from Convoluted Tubules.
 U. E. " " Ureters.
 P. E. " " Pelvis of Kidney.
 U. B. " " Upper Layer of Bladder.
 M. B. " " Middle " " "
 C. O. Calcium Oxalate.
 U. A. Uric Acid.
 U. G. Uric Acid Gravel.
 S. U. Sodium Urate.

varies in direct proportion to the number of cellular elements. It must not be forgotten that a moderate number of red blood cells points conclusively to an acute inflammation.

In the chronic stage of the disease the microscopical picture is quite different. Red blood corpuscles are almost entirely absent. There are a number of small, glistening, highly refractive granules and globules which are fat and appear either free or in the epithelial cells and pus. The more fat present the more chronic the inflammation. Free fat globules or granules present in the epithelial cells or pus corpuscles denote chronicity.

FIG. X.



Chronic Interstitial Nephritis and Cystitis
(Chronic Catarrhal Pyelo-Nephritis).

C. E. Epithellum from Convoluted Tubules containing fat Globules.

S. E. Epithellum from Straight Collecting Tubules containing fat Globules.

U. E. Epithellum from Ureter containing fat Globules.

P. E. Epithella from Pelvis containing fat Globules.

M. B. Epithellum from Middle Layer Bladder containing fat Globules.

F. G. Free Fat Globules.

P. C. Pus Corpuscles.

The other features present are pus corpuscles, cuboidal epithelial cells from the convoluted tubules of the kidney and in se-

vere cases columnar cells in small numbers from the straight collecting tubules; there are also usually epithelial cells from the pelvis and upper part of the ureter, but the number is not large.

In *croupous or parenchymatous* nephritis the symptomatology and clinical picture are especially characteristic although they naturally vary with the intensity of the lesion. There is mania, headaches, loss of appetite, loss of flesh, malaise, and nausea. In the more severe acute processes there may be a beginning chill followed by a rise of temperature. Edema makes its appearance early, appearing first in such localities as the eyelids, but soon becoming more or less general. In the more severe cases there may be uremic seizures.

Albumin is almost always present in large amounts. In the acute stage the amount of urine is decreased and in some patients only a few ounces may be passed during a period of twenty-four hours. The specific gravity is almost always higher than normal. The color is dark, due to the presence of blood. The urea is markedly decreased, as well as the other solids, to a greater or less degree.

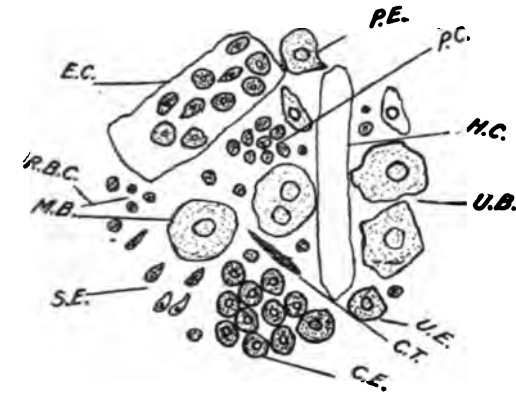
In *chronic cases* the amount of the urine is at first decreased, and then later increased to a large amount with low specific gravity, and usually a pale color.

In the *acute croupous type* there are pus cells, red blood cells and epithelium from the convoluted tubules; also usually epithelium from the straight tubules. The most important elements are the casts of which the following varieties are invariably found—the hyaline and the epithelial. The severity of the inflammation is indicated by the number of the casts, for the more numerous they are the more albumin

and the more extensive the pathological condition.

In a considerable number of cases there is an accompanying cystitis which is shown by the presence of bladder elements.

FIG. XI.

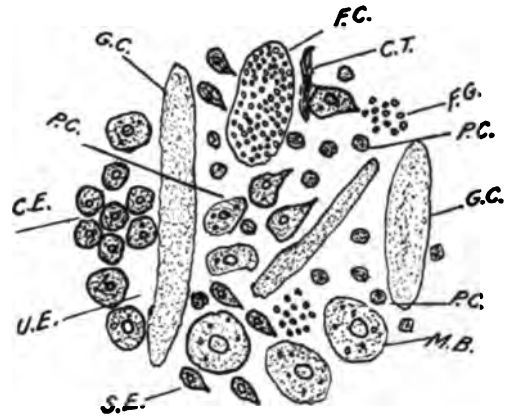


Acute Croupous or Parenchymatous Nephritis with Catarrhal Pyelitis and Cystitis.

- R. B. C. Red Blood Corpuscles.
- P. C. Pus Corpuscles.
- C. E. Epithelium from Convolved Tubules of Kidney.
- S. E. Epithelium from Straight Collecting Tubules of Kidney.
- U. E. Epithelium from Ureter.
- P. E. Epithelium from Pelvis.
- U. B. Epithelium from Upper Layer of Bladder.
- M. B. Epithelium from Middle Layer of Bladder.
- H. C. Hyaline Cast.
- E. C. Epithelial Cast.
- C. T. Connective-Tissue Shred.

Chronic croupous or parenchymatous nephritis shows a characteristic difference in the casts, there being no hyaline or epithelial casts found in the urine. The casts for the most part are granular with some fatty. In all chronic inflammatory conditions there are free fat globules and granules present. If the condition goes on to a fatty degeneration there will soon be found a large number of fatty casts.

FIG. XII.



Chronic Parenchymatous or Croupous Nephritis Catarrhal Pyelitis and Cystitis.

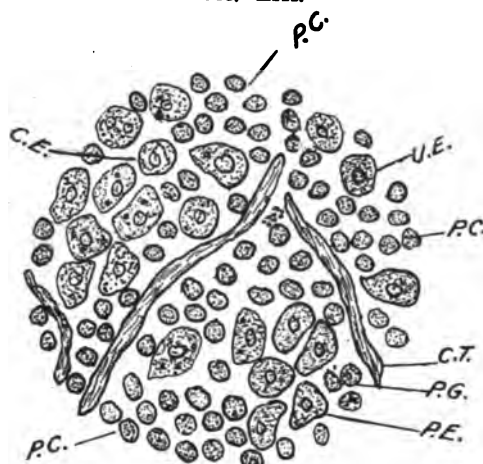
- P. C. Pus Corpuscles.
- C. E. Epithelium from Convolved Tubules of Kidney.
- S. E. Epithelium from Straight Collecting Tubules of Kidney.
- P. E. Epithelium from the Pelvis.
- M. B. Epithelium from Middle Layer of Bladder.
- G. C. Granular Cast.
- F. C. Fatty Cast.
- C. T. Connective-Tissue Shreds.
- F. G. Free Fat.

An abscess may frequently develop in the pelvis of the kidney as the result of a catarrhal pyelitis or to the presence of a calculus.

The exact diagnosis of this condition can nearly always be ascertained by a microscopic examination, and the field of acute suppurative pyelitis will be as follows—red blood corpuscles in fairly large numbers and an abundant number of pus cells and irregular epithelial cells from the pelvis. There are also many connective tissue shreds which must be present to enable us to make the diagnosis.

Very shortly after this condition has developed we will find a moderately large number of epithelial cells from the convolved tubules of the kidney showing an accompanying nephritis; later there will

FIG. XIII.



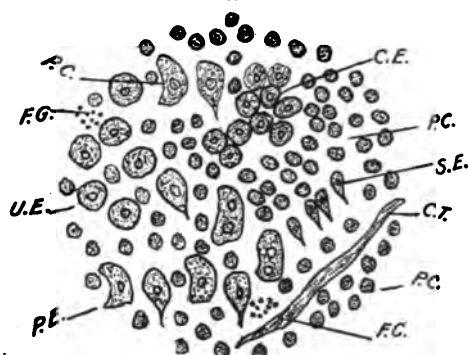
Acute Abscess of Pelvis of Kidney or Acute Suppurative Pyelitis.

- P. C. Pus Corpuscles.
 P. E. Epithellum from Pelvis of Kidney.
 C. E. " " Convoluted Tubules of Kidney.
 U. E. " " Ureter.
 C. T. Connective-Tissue Shreds.
 F. G. Free Fat Globules.

appear columnar cells from the straight collecting tubules. In suppurative nephritis the urine is almost opaque, due to the large amount of pus and if allowed to stand for a short time there will appear a heavy sediment. Albumin in large amounts is found. The clinical symptoms are not at all characteristic and the diagnosis must be left to the microscope which will show the following findings: The pus corpuscles are so numerous that frequently they hide the other elements and it will be difficult to find the epithelial cells from the convoluted and straight tubules of the kidney, although they are always present. Free globules of fat in the cells are seen in large numbers together with a large amount of connective tissue shreds and a small number of red blood corpuscles.

All of us have had cases under our care in which the microscope showed a marked excess of crystals of uric acid and calcium

FIG. XIV.



Chronic Suppurative Nephritis with Catarrhal Pyelitis.

- P. C. Pus Corpuscles.
 S. E. Epithellum from Straight Collecting Tubules.
 C. E. " " Convoluted Tubules.
 P. E. " " Pelvis.
 U. E. " " Ureter.
 C. T. Connective-Tissue Shred.
 F. G. Free Fat Globule.

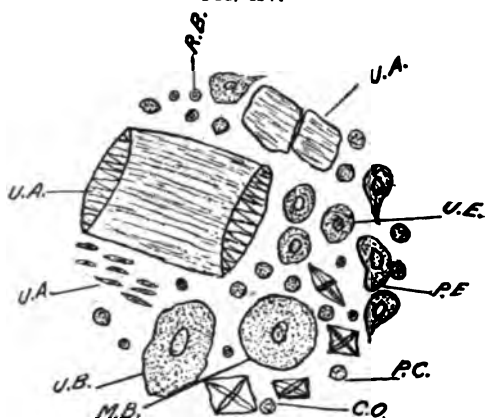
oxalate, a condition known as *lithemia*, and accompanied by the following symptoms: insomnia, vertigo, dyspepsia, persistent constipation, frequency of urination both by day and night, together with a dull pain in the lumbar region.

When uric acid occurs in excess in the urine it is desirable that its formation should be checked and that the crystals that have been deposited in the kidney and bladder should be eliminated. If the formation of the crystals continues there are apt to be attacks of renal or vesical colic causing severe pain, accompanied frequently with hematuria.

The microscopic picture of this condition is particularly interesting. There appear together with the red blood corpuscles and pus cells, uric acid and calcium oxalate crystals, and epithelial cells from the pelvis, and the upper and middle layers of the bladder.

I will not dwell upon the symptoms of chronic *prostatic inflammation* accompan-

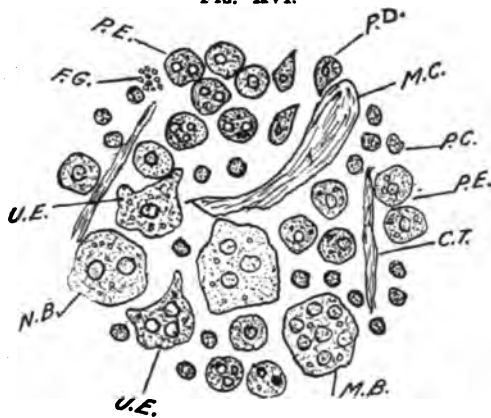
FIG. XV.



Lithemia with Catarrhal Pyelitis and Cystitis.

- U. A. Uric Acid Crystals.
- C. O. Calcium-Oxalate.
- R. B. Red Blood Corpuscles.
- P. C. Pus Corpuscles.
- P. E. Epithelium from Kidney Pelvis.
- U. E. " " Ureter.
- U. B. " " Upper Layer of Bladder.
- M. B. " " Middle " " "

FIG. XVI.



Chronic Prostatitis with Hypertrophy of the Prostate.

- P. C. Pus Corpuscles.
- P. E. Epithelium from Prostate.
- P. D. " " Prostatic Ducts.
- U. E. " " Urethra.
- M. B. " " Middle Layer of Bladder.
- N. B. " " Neck of Bladder.
- C. T. Connective-Tissue Threads.
- M. C. Mucus Casts.
- F. G. Free Fat Globules.

ied as it always is with hypertrophy of that organ, for the condition is familiar to you all, but will only mention the microscopic findings.

The illustration shows clearly the elements found in this condition, the pus corpuscles containing fat globules, while the epithelial cells are shown to be from the prostate, the prostatic ducts and urethra, and from the middle layer of the bladder.

There appear also connective tissue shreds, mucus casts and free fat globules and granules.

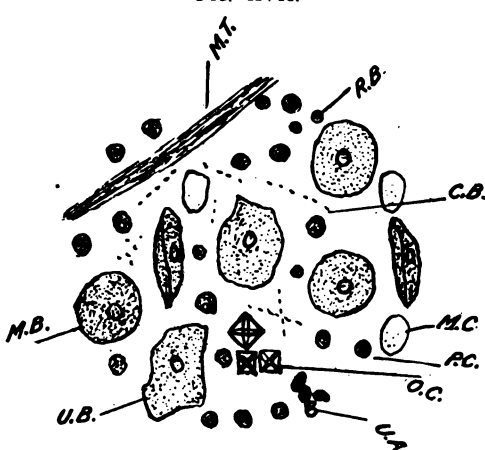
In *acute catarrhal cystitis* the symptoms are so well known, and so clear, that I will not take the time to describe them.

The accompanying illustration shows a typical field in this condition.

There are red blood corpuscles and pus-cells, epithelial cells from the upper and middle layers of the bladder, mucus threads and corpuscles, together with cal-

cium oxalate and ammonium urate, with abundant bacteria.

FIG. XVII.



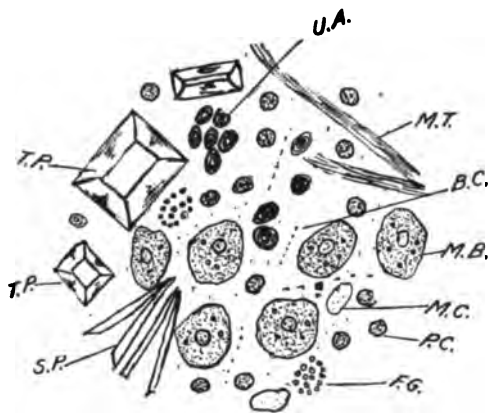
Acute Catarrhal Cystitis.

- R. B. Red Blood Corpuscles.
- P. C. Pus Corpuscles.
- O. C. Calcium-Oxalate Crystals.
- U. A. Ammonium Urate.
- U. B. Epithelium from Upper Layer of Bladder.
- M. B. " " Middle " " "
- M. T. Mucus-Thread.
- M. C. " " Corpuscles.
- C. B. Cocci and Bacilli.

In the *chronic type of catarrhal cystitis* the picture changes considerably.

There are practically no blood corpuscles present, the crystals of ammonium urate are more abundant, there appear also crystals of the triple phosphates and simple phosphates. There are pus corpuscles, and epithelial cells from the middle layer of the bladder, containing fat globules and granules. There are abundant bacteria. The free fat and that contained within the cells denotes as mentioned above—chronicity.

FIG. XVIII.

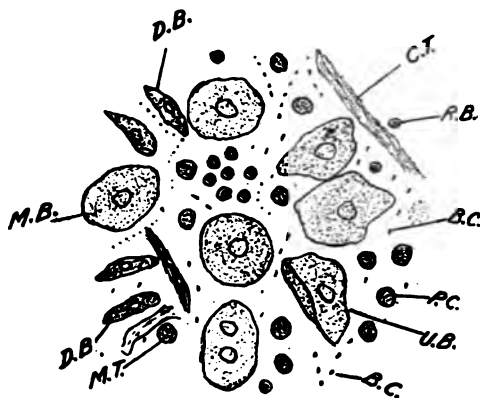


Chronic Catarrhal Cystitis.

- U. A. Ammonia Urate.
- T. P. Triple Phosphate.
- S. P. Simple "
- P. C. Pus Corpuscles.
- M. B. Epithellum from Middle Layer of Bladder containing Fat Globules.
- M. T. Mucus-Threads.
- M. C. " Corpuscles.
- B. C. Bacilli and Cocci.
- F. G. Free Fat Globules.

In the chronic type of *ulcerative cystitis*, the fat globules make their appearance and the red corpuscles disappear. The drawing is especially characteristic of this condition.

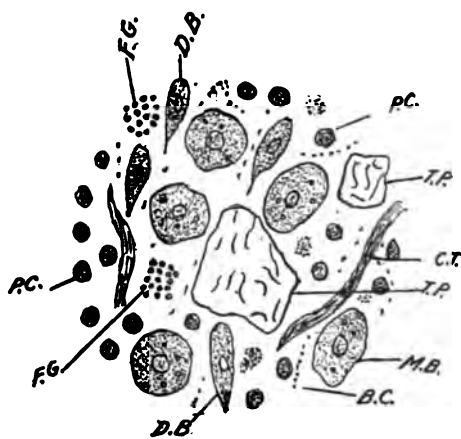
FIG. XIX.



Acute Ulcerative Cystitis.

- R. B. Red Blood Corpuscles.
- P. C. Pus Corpuscles.
- U. B. Epithellum from Upper Layer of Bladder.
- M. B. " " Middle " " "
- D. B. " " Deep " " "
- C. T. Connective-Tissue Shreds.
- M. T. Mucus Threads.
- B. C. Bacilli and Cocci.

FIG. XX.



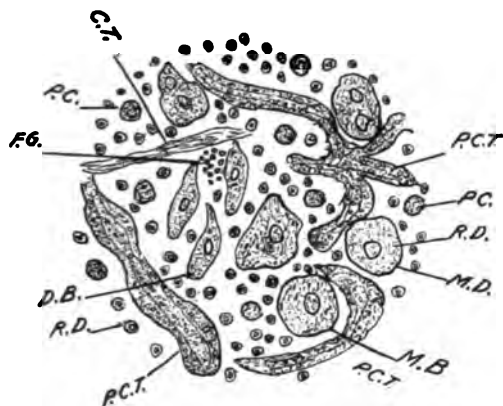
Chronic Ulcerative Cystitis.

- P. C. Pus Corpuscles.
- M. B. Epithellum from Middle Layer of Bladder.
- D. B. " " Deep " " "
- T. P. Triple Phosphates incomplete.
- C. T. Connective Tissue Shreds.
- F. G. Free Fat Globules.
- B. C. Bacilli and Cocci.

In hematuria due to a papilloma of the bladder, the microscopic analysis of the urine gives an accurate picture. There are present blood corpuscles in abundance,

epithelial cells from the deep and middle layers of the bladder and peculiarly characteristic papillomatous connective tissue shreds. These latter shreds with blood and pus epithelial elements must be present to allow us to diagnosticate vesical papillomata.

FIG. XXI.



Papilloma of the Bladder.

- R. D. Red Blood Corpuscles.
- P. C. Pus
- M. B. Epithelium from Middle Layer of Bladder.
- D. B. " " Deep " " "
- F. G. Free Fat Globules.
- C. T. Connective Tissue Shred.
- P. C. T. Papillomatous Connective Tissue.

In conclusion, I have endeavored to show how necessary it is to be familiar with the pathological features found in the urine. I have tried to bring to your attention the fact that an accurate diagnosis may be made from the microscopic study of the urine, and the determination of the source of the different elements is particularly important in reaching this conclusion.

When I state that it is possible to recognize the epithelium from the different portions of the urinary tract, I appreciate the fact that there are many who do not believe this possible. I trust that this article will in a measure clear up some of

the more uncertain points. It has been my good fortune to have had the privilege of examining a large number of specimens of urine, drawn from the separate kidneys by the ureteral catheter, in practically all the different pathological forms of renal and pelvic conditions. Thus I have been able to examine the urine, free from any contamination of the lower urinary channels. By carefully studying the desquamated epithelial cells, I have been able to draw comparisons between them and with the knowledge thus gained I feel that I am able to definitely recognize the different elements in mixed urine.

808 Chicago Savings Bank Building.

VARIETIES OF TUBERCLE BACILLI AND CERTAIN ALLIED FORMS OF MICRO-ORGANISMS.

BY

H. EDWIN LEWIS, M. D.,

New York City.

The student of bacteriology cannot help but be impressed by the comparative biology and morphology of certain forms of bacteria. With the evolution of laboratory methods and the consequent discovery of countless new micro-organisms, it would seem that this form of organic life can really be divided into individual species, with subdivisions, or classes, which morphologically and biologically represent distinct series of a graded character. Not the least important discovery in connection with the above, is the fact that many micro-organisms ordinarily considered non-pathogenic, have a well defined place morphologically and tinctorially in the gradation of many series. From this cue, advanced laboratory and clinical re-

search have further demonstrated that the sharp distinctions that have been drawn between pathogenic and non-pathogenic micro-organisms can now no longer be considered as absolute, for it is apparent that many bacteria hitherto classed as non-pathogenic can, under certain conditions, become decidedly pathogenic.¹ This has been well shown in the action of certain members of the colon group. In many instances the bacillus coli communis is innocuous and non-pathogenic, but late investigation leaves little doubt that under some conditions it bears a very close pathogenic relation to the typhoid bacillus and its atypical forms. The possibility that the bacilli of a series may by environment assume the identical characteristics of higher members of the same series, permits deductions that may enable us to satisfactorily account for the frequent assump-

tion of increased pathologic virulence on the part of organisms that ordinarily are comparatively harmless.

The importance of the question in connection with the study of tuberculosis is evident. Very recently a large number of bacilli from many sources have been discovered, closely resembling the bacillus tuberculosis in morphologic, tinctorial, cultural and experimental peculiarities. From the first it was demonstrated that the tubercle bacillus possessed certain properties in its relation with the aniline dyes, and when properly stained that decolorization was impossible with the mineral acids or alcohol. Hence it has been customary to speak of the tubercle bacillus as an acid-proof or acid fast bacillus. Until recently the bacillus tuberculosis stood alone in this characteristic, with the exception of the lepra and smegma bacilli, and even the latter can be decolorized by 95% alcohol. But within the past two years, a comparatively large number of acid-proof bacilli, showing close morphologic and cultural relations to the bacillus tuberculosis, have been isolated. Of still further significance, is the fact that the tubercle bacillus itself has by no means been constant in its behavior, and in studying the bacilli from human, bovine or avian tuberculosis,² or indeed from different cases or lesions of the same form,³ certain variations in virulence, cultivation and morphology have been discovered. Therefore, in enumerating a list of the members of the acid-fast group for purposes of comparative study, we must take the average bacillus from human tuber-

¹Lehmann. *Atlas and Principles of Bacteriology*.—"In every species of bacterium which is closely studied, there are found closely related forms that not rarely represent to the unprejudiced unbroken links to the other species. I will recall only the discoveries which have been made regarding the streptococci, the colon group, the diphtheria organisms, and the relatives of the cause of tuberculosis which so long stood almost entirely isolated. . . . We certainly believe it belongs to the future to convert varieties of bacteria into others, in a manner scarcely to be imagined to-day. The forms of the micrococcus pyogenes are convertible into each other; the *Bacterium pyocyaneum* and *Bacterium fluorescens* can, indeed, almost certainly be converted into each other; and similar statements regarding typhus and coli, diphtheria and pseudo-diphtheria, etc., are always still looked upon with scepticism, but the possibility, yes, even the probability, can scarcely be contested any more.

"For medical men the division of bacteria into pathogenic and non-pathogenic, as is still done in text books, has failed absolutely. We can understand and know the pathogenic varieties only if we study simultaneously the non-pathogenic, from which the former have once originated and will always originate.

"The doctrine of the absolute constancy of bacteria which for ten years was almost a dogma is now scarcely at all seriously advocated."

²Theobald Smith. Jour. of Boston Soc. of Med. Science 1900, IV., 95.

³H. Edwin Lewis. Jour. of Tuberculosis, January, 1902, Vol. IV., 5.

TUBERCLE BACILLI AND ALLIED FORMS OF MICRO-ORGANISMS.



FIG. 1.
Bacilli of Human Tuberculosis in Sputum.



FIG. 2.
A Typical Miliary Tubercle.

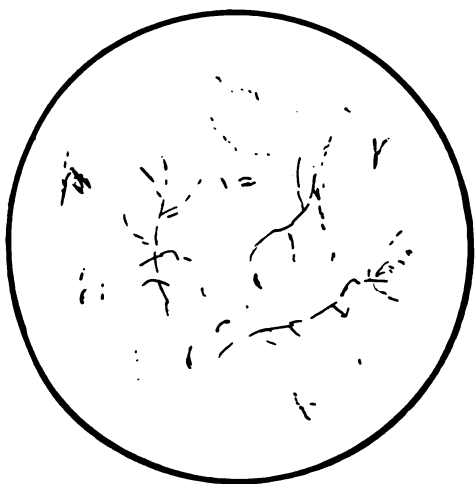


FIG. 3.
Bacilli of Blind Worm Tuberculosis. (Moeller).

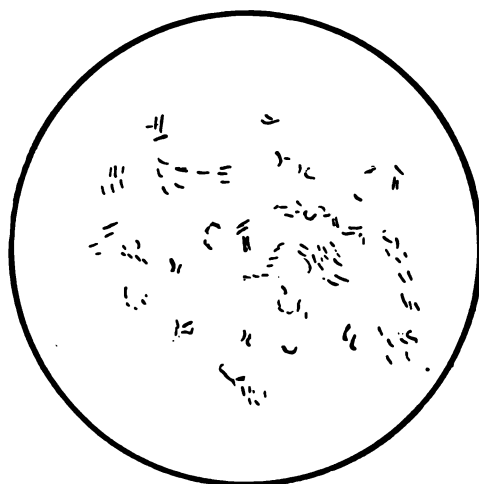


FIG. 4.
Timothy Grass Bacilli. (Moeller).

culosis as the type, and show the relation of allied forms to it.

LIST OF ACID-FAST BACILLI OF TUBERCULOSIS GROUP.

FORMS OF TUBERCLE BACILLI.

BACILLUS OF HUMAN TUBERCULOSIS. (Fig. 1). Small rod-shaped bacillus, first isolated by Koch, 1881, 1.1 to 3.5 microns in length, and 0.2 to 0.5 microns in breadth. Rounded ends and slightly curved. A peculiar beaded appearance frequently observed. Stains well with aniline dyes and resists decolorization with acids or alcohol. Grows artificially on blood serum, glycerin agar-agar, glycerin bouillon, and to a moderate extent, on potato, at a temperature of 37-38° C. Pathogenic with varying degrees of virulence for man and some of the lower animals—dogs, cats, monkeys, rabbits and guinea pigs. Moderately pathogenic for cattle, swine, horses and asses.¹

BACILLUS OF BOVINE TUBERCULOSIS.

First isolated by Koch, and considered by him as identical with that from human sources. Morphologically, the bovine bacillus, grown on coagulated serum, is shorter and never curved. (Smith).² Grown with more difficulty on the various culture media. Highly pathogenic for cattle, swine, asses and most of the lower animals. Mice not susceptible to it. (Smith). Pathogenic influence of bovine tubercle bacilli on human beings, not well defined. Strong presumptive evidence to show that bovine bacilli are pathogenic in occasional instances.³

BACILLUS OF AVIAN TUBERCULOSIS.

Morphologically, the avian bacillus is longer and more slender than the human. Upon culture media a distinct rapidity of growth is observable, and we find that instead of growing only where glycerin is present, the bacillus of avian, or fowl tuberculosis, will grow upon ordinary blood serum, agar-agar and bouillon. (MacFarland).⁴ It will not grow on potato. The growth on artificial culture media is luxuriant, and lacks the dry quality characteristic of ordinary tubercle bacilli cultures. Most pathogenic for birds, affecting the liver extensively, but rarely, if ever, invading the lung. Rabbits are also easily affected with avian tubercle bacilli, but guinea pigs are quite

immune. The bacilli stain more easily than those from human sources.

BACILLUS OF FISH TUBERCULOSIS.

Isolated by Bataillon Dubard and Tære (Dijon) from a tumor of a carp. The fish was found in a pond infected with tuberculous sputum. Grows best at 22 to 25° C. Slightly pathogenic for guinea pigs and rabbits.

BACILLUS OF BLIND WORM TUBERCULOSIS. (Fig. 3).

Isolated by Moeller from the spleen of a blind worm infected with tuberculous sputum. In morphology and staining very similar to the tubercle bacillus. Grows best at 22° C. Not pathogenic for warm blooded animals.

ALLIED FORMS.

TIMOTHY GRASS BACILLUS.¹ (Fig. 4).

Obtained by Moeller from certain grasses (*Phleum pratense*, *Bromus Erectus*, etc.) used as fodder. The Timothy bacillus morphologically and tinctorially is a micro-organism closely resembling the bacillus tuberculosis hominis. It grows on all nutritive media, best at about 37° C. In animals usually experimented upon, it provokes a tuberculous affection.

GRASS BACILLUS II. (Fig. 5).

A micro-organism similarly found by Moeller on fodder grasses. Morphologically throughout of somewhat coarser form than the Timothy bacillus. It manifests one special peculiarity in its tendency to grow out in long rodlets and ramifications. It grows on usual culture media even in temperature of a room; more quickly at about 37° C. When employed to produce pathogenic effects on animals, it manifests special virulence in milk cultures.

BUTTER BACILLUS.² (Fig. 6).

Isolated by Rabinowitsch from butter. Morphologically and tinctorially very similar to human tubercle bacilli. It grows on usual culture media in a room temperature, but more speedily at about 37° C. Its pathogenic effect on animals is severe when injected with butter.

MILK BACILLUS. (Fig. 7).

Isolated by Moeller from milk. Acid and alcohol-proof. In morphology, and cultivation closely resembles Grass Bacillus II.

EXCREMENT BACILLUS.

Isolated by Moeller from the excrement of herbivora. In morphology, and staining closely resembling the tubercle bacillus. Growth and pathogenic effects similar to those of the Grass Bacillus II.

¹J. G. Adami, Phila. Med. Jour., February 22, 1902, pp. 356-357.

²Theobald Smith. The Medical News, February 22, 1902.

³M. P. Ravenel, Phil. Med. Jour., July 21, 1900, and Repp. in American Medicine, October 26, 1901, p. 645; Nov. 2, p. 688.

⁴MacFarland. Pathogenic Bacteria, p. 239.

¹Centr. f. Bakt., Abth I., 1899, xxv., 369-373.

²Butter bacilli have also been isolated by Korn, Grassberger, Binot, Tobler and Morgeuroth.

TUBERCLE BACILLI AND ALLIED FORMS OF MICRO-ORGANISMS.

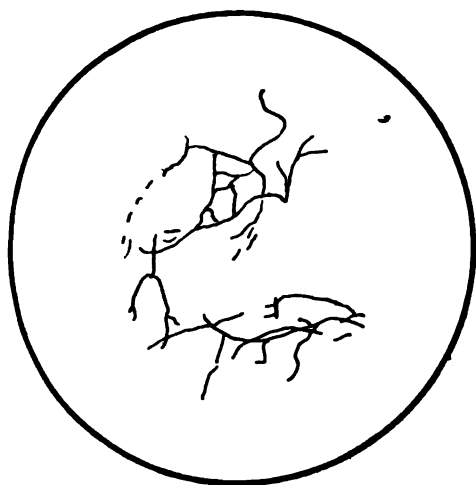


FIG. 5.
Grass Bacillus II. (Moeller).

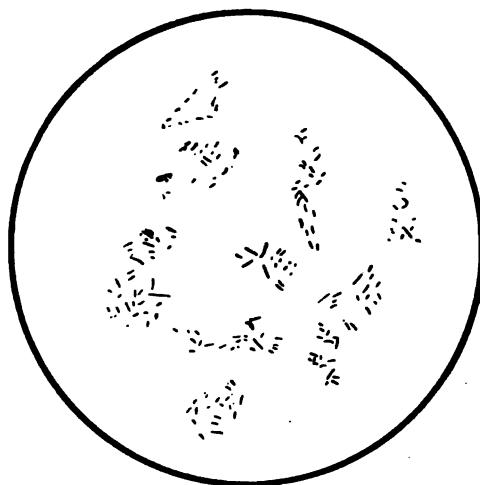


FIG. 6.
Butter Bacilli. (Rabinowitsch).

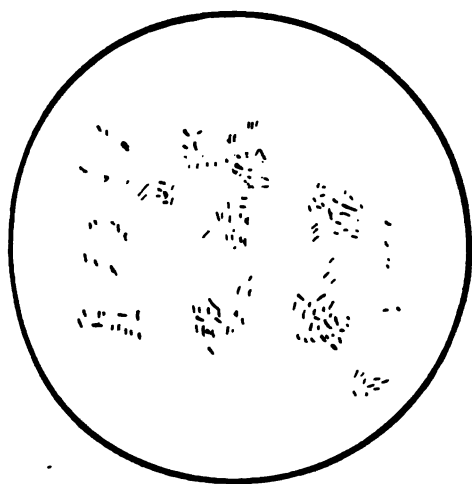


FIG. 7.
Milk Bacilli. (Moeller).



FIG. 8.
Bacilli from a case of Acute Bronchitis. (Lewis).

ACID-RESISTING BACILLUS SIMULATING BACILLUS TUBERCULOSIS.¹

Isolated by *Rabinowitsch* from a case of gangrene of the lungs. Cultures obtained from the sputum and from the gangrenous focus. Thicker and longer than the tubercle bacillus; some forms may be shorter, presenting a clubbed swelling at one end; short threads are occasionally seen.

ACID-RESISTING BACILLUS SIMULATING BACILLUS TUBERCULOSIS.

Isolated by *Marpmann* from urine.

ACID-RESISTING BACILLUS SIMULATING THE BACILLUS TUBERCULOSIS.

Isolated by *Mironesco* (Berlin) from human feces.

ACID-RESISTING BACILLUS SIMULATING THE BACILLUS TUBERCULOSIS.

Isolated by *Karlinski* (Maglaj, Bosnien) from nasal secretion.

PSEUDO-FORMS OF TUBERCLE BACILLI.**BACILLUS PSEUDO-TUBERCULOSIS.²**

Isolated by *Pfeiffer* from rodents. Produces lesions closely resembling typical millary tubercles. Small organism, similar to tubercle bacillus. Grows well on ordinary media at 37°.

ASPERGILLUS FUMIGATUS.

An aspergillus pathogenic to man, and the causal agent in a disease simulating phthisis, and common among the professional *gaveurs* of pigeons for the markets of Paris. Examination of sputum shows no trace of the bacillus tuberculosis, but large quantities of the mycelial threads and spores of this aspergillus. The system of gavage consists in the filling of the mouth with the mixture of grain and water, and the forcing of the mixture down the throat of the pigeon, the beak being placed in the operator's mouth. The spores of the mycelium exist probably on the grain.

In addition to the preceding list of the bacilli so closely allied to the tubercle bacillus there are a number of organisms possessed of greater or less pathogenicity which either in themselves closely resemble tubercle bacilli, or produce lesions of a similar character. These are the bacillus

of leprosy, and the actinomyces or the streptothrices.

In regard to leprosy, it may be said that the lepra bacillus bears close resemblance to tubercle bacilli, particularly in staining properties. Morphologically, the size is about the same as the bacillus tuberculosis, but it is never curved. In cultural and inoculation peculiarities, however, the lepra bacillus is very different in behavior, for no satisfactory growth has ever been obtained on any cultural media, nor have successful inoculations of the lower animals ever been made. Although the bacillus of leprosy and the bacillus of tuberculosis are manifestly distinct, there are a few points of similarity in the lesions produced. It may be a significant fact also, that tuberculosis is a very frequent accompaniment of leprosy,¹ and although it may be heretical to say it, future research may show that the two diseases are more closely related than is now believed.

In regard to the actinomyces or streptothrices,² while these organisms are not pure bacteria, being fungoid in character, certain lesions produced by them, in cattle

¹P. S. Abraham in Allbutt's System of Medicine, Vol. II., p. 59.

²T. D. Acland. Allbutt's System of Medicine, Vol. II., p. 90. "The biological position of actinomyces is one of much interest, and has been the subject of wide differences of opinion, owing to the fact that in some points it resembles a bacterium (Schizomycetes), in others it resembles a mould (Hyphomycetes) . . . M. M. Sauvageau and Radais conclude that the organism is not a bacteria, but is in reality a streptothrix (Cohn), and belongs to the higher fungi—it has no sheath, is branched like a mycelium, the filament dividing into rods and granules, which spores are formed by the segmentation of filaments. . . . On such grounds actinomyces is classed by Sauvageau and Radais amongst the Hyphomycetes, sub-order Mucedinæ, to which it has been proposed to give the generic name of Oospora (Waelroth). Dr. Crookshank maintains that this group of organisms is intermediate between the bacteria and the higher micro-fungi."

¹Deutsche Med. Wochenschr. 1900.

²Similar to or identical with the organism described by Welch in 1894 and Kutscher in 1896.

and occasionally in men, show marked resemblance to tuberculosis. Indeed, actinomycosis of the lung has frequently been mistaken for tuberculosis. A chronic process is produced with the development of nodules and invasion of the lymphatics. In mycetoma, a curious disease produced by a streptothrix, and peculiar to the Indian province of Scinde, the bones of the extremities, more frequently the lower are riddled with canals, the process closely approximating tuberculous osteitis in appearance.

All of the streptothrices and actinomyces in inoculation experiments on rabbits and guinea pigs, produce lesions similar in gross respects to tuberculosis.

Flexner has described a pathologic condition characterized by a caseous pneumonia and a nodular condition of the peritoneum, which he has called pseudo-tuberculosis-hominis-streptothrica. A streptothrix was found in the lesions¹

"In the sputum of a case of acute bronchitis occurring in a robust dairyman I found, in addition to streptococci, a number of fairly long bacilli, some of which were branched two or three times. Some appeared broken like a chain. These bacilli were acid-proof and alcohol-proof and stained well by the Ziehl-Gabbet method. Rabbits inoculated with this sputum showed suppuration at the point of inoculation and a lymphatic enlargement in three weeks. In shortly over a month in some caseous material taken from the peritoneal glands of these rabbits I was able to find the same bacillus, but in interwoven clumps. Those bacilli that were separated from these clumps were smaller and resembled tubercle bacilli closely, with the exception of being considerably thicker. The patient gave a history of having been loading hay for several days and having caught cold on the third day of this particular work. He had no chill but commenced to cough quite severely. He did not stop work, but complained bitterly of profuse perspiration, al-

though it was in midwinter. At the time of my first seeing him his temperature was 99.6 degrees; pulse 80; cough very severe, and with much purulent expectoration. His underclothing was fairly soaked with perspiration. Physical examination, aside from the moist bubbling rales over the larger bronchial tubes typical of bronchitis, was negative. Under suitable treatment he made a good recovery and in four weeks was entirely well. He informed me and I was able to verify the fact that two other men working with him in loading hay were taken sick just as he was, and at the same time. I am inclined to believe that this was a case where a grass or hay bacillus was present, and in some degree actually pathogenic."¹ (Fig. 8).

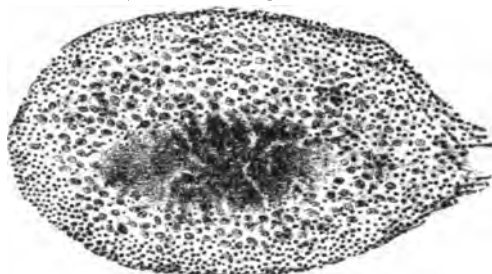


FIG. 8.
Tubercle-like lesion produced by Timothy Bacillus.
(Moeller).

The relation of the streptothrices to the tubercle bacillus and its allied forms is by no means well defined, but the question is interesting, particularly as it is known that small branched forms of bacilli resembling the actinomyces, or even higher fungoid organisms, are frequently found in tubercular lesions.

Now after considering all of the foregoing, the paramount question is, what clinical and pathogenic relation do varieties of tubercle bacilli and the allied forms of micro-organisms bear to each other? The answer to this question will certainly go far towards clearing up much of the uncertain knowledge existing at present in re-

¹Jour. of Experimental Medicine, 1898.

¹Lewis. Jour. of Tuberculosis, January, 1902.

gard to the etiologic relation of bacteria to disease. In view of the many investigators at work, it does not seem unduly sanguine to anticipate its early solution, and probably it will be only a short space of time before the ill defined qualities of immunity and susceptibility will be more thoroughly understood in their relation to bacterial virulence.

Meanwhile it is evident that micro-organisms represent many distinct species, and that each species, or family, is composed of numerous varieties subject to evolutionary tendencies. Such being the case, the study of tubercular and similar lesions points to the fact, as Adami¹ says, that we have varieties, and not species of tubercle bacilli. The forces that modify or increase the pathogenicity of any variety of bacteria are as yet unknown, but it would seem that clinical study and further investigation along the line of physiologic chemistry, must sooner or later supply the solution of these problems which now confront us. At any rate until stronger negative facts than at present possessed, are brought forward to disprove the growing belief in the power of bacterial accommodation or convertibility, we are justified in considering each member of the tuberculosis group as a potential, if not an active force, in the production of tuberculosis.

As pointed out by A. Ernest Maylard, transverse abdominal incisions produce more permanently secure cicatrices and afford more room for manipulation than vertical. On the other hand, the latter involve division of fewer blood-vessels, are more easily closed, and hence are superior whenever time is an object.

¹J. G. Adami. Phila. Med. Jour., February 22, 1902, p. 361.

A CONTINENT WITHOUT AN ORPHAN.

BY

BAYARD HOLMES, M. D.,

Chicago, Ill.

When America was first settled, England was in the throes of legislation instituted to secure for every citizen personal and religious liberty. The early settlers of America were many of them fanatical on this subject and kindred reforms depended upon or clustered about this central idea. In the end the great moral impulse which these early empire builders stood for was expressed in the Constitution of the United States, and was logically completed with the Fourteenth and Fifteenth Amendments of the Constitution which followed the Civil War. The constructive moral courage of the nation seems to have been exhausted in these efforts and as a people we have settled down in self complacent satisfaction on a plateau of social indifference and sordid satiety. Noble ideals, courageous adventure, and lofty effort find no soil in even the descendants of the Puritans, and the Quakers. Only tardily does the sentiment of cosmopolitan decency force upon unwilling communities and legislatures the most human, reasonable and obvious departures from the individualistic and haphazard ways of our frigid grandfathers.

In all things social as well as geographical is the Commonwealth of Australia antipodal to us. The common law of England prevails there, modified by 301 years of English and a less number of Australian common sense. Our statutes if not our state constitutions make our common law rest where the English com-

mon law was in 1607. But more than this, Australia has a flexible constitution and a people who demand decent and reasonable legislation and its honest execution.

This is illustrated most comprehensively by the treatment of the fatherless and motherless infant. In all this great continent embracing 3,000,000 square miles and this federation of seven commonwealths there is not an orphan or an orphan asylum, there is not a baby farm or a foundling asylum, there is not a private or eleemosynary body exploiting the fatherless and motherless. No community in that great continent has its feelings, sentiments or complacency outraged by periodic exposures of the enormous death rates in monastery-like structures where children are huddled in the name of charity.

It is this way. Every fatherless and motherless child is a child of the State. The Children's Council which is a department of state at once provides a father and mother for the child of the State. Suppose a baby is found by the police. It is at once taken to the home of a woman designated by the Children's Council for that service in that precinct. The next day the child is taken before the judge of the Juvenile Court when the necessary legal records are made. The proper officer of the Children's Council then places the child in the arms of a foster mother who cares for and nurses the child. Every week the officer of the Council visits the infant and at regular intervals the Council physician and a voluntary organization sends also its visitor with delicacies in the way of clothing. Records are kept at the office of the Council and the foster mother is paid from the treasury of the Council a weekly stipend.

As the infant grows older he is placed in a home preferably in the country where the same inspection continues and a smaller stipend is paid. The child goes to school and the teacher reports to the Children's Council as to a parent. At last the child hires out to work a part of each year. The salary is deposited in the Postal Savings Bank to the child's credit. The regular schooling continues however. The child becomes ambitious, wishes to go to a trade school or to the preparatory school. He applies to the Children's Council for permission to draw his savings from the bank for that purpose. The Council acts as a parent would.

No more interesting or heart warming literature can be read than the formal and perfunctory reports of the Children's Council. But we go on here building stone and brick orphan asylums in which the death rate is incredible among the children while the *Sarcoptes scabiei*, the *Blatta Occidentalis* and the *Mus decumanus* as well as the parasites of all the acute infectious diseases of children thrive beyond their records in prison and tramps' lodging houses. The Baptist, the Methodist and every other Christian denomination still has its orphan asylum, conducted by a Board and funds are called for in the name of charity, if not in the name of Christ. The reports do not show the death rate, the terrible condition of the survivors mutilated by the infectious diseases and dwarfed by institutionalism. The wretched appearance of the orphans, the half orphans and the bastards as they straggle along in military step before visitors is complacently attributed to heredity. They are pointed to as a humble example to

keep men from whiskey and women from free love. When these same children brought up in hotel like structures arrive at an age when they ought to be self supporting they are forced out into a world of which they know nothing. They can not build a fire, fill or light a kerosene lamp, cook the simplest meal or do the commonest chores. The boys cannot do the barn work, the girls cannot do the house work of a common home. Neither make good servants, and in the factory they can run only the simplest machines. They are neither strong, quick nor well. They are irreparably unfitted for modern or any other life.

For fifteen years I have urged upon everyone who would hear me, privately, publicly or through the press, the lesson of the "Children of the State" in Australia. No one is influenced to action.

Marasmus still kills fifty per cent. of the babies in the foundlings' homes and on the baby farms. The orphan asylums and half orphan asylums grow in architectural magnificence every year, new oil paintings of patrons, patronesses and presidents are added to the walls of the sumptuously furnished "Board Room" and the "*Orphans Call*" increases its circulation, its size and its pictorial importunity.

We are richer than Australia? Can't we be as reasonable and as humane?

Every child is entitled to a mother, a father and a home.

Fibrous adhesions occurring after gonorrheal arthritis sometimes require the exertion of considerable force for their separation. It is important to prevent their re-formation by repeating the manipulations at intervals, if there is a tendency to returning stiffness, and by the adoption of appropriate exercises.

TRANSITORY DISTURBANCES OF CONSCIOUSNESS IN EPILEPTICS.

BY

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Acute psychical disturbances may at any time manifest themselves in epileptics, and must be regarded as the direct expression of the existing brain disease (just as the convulsive seizures are). Psychic disturbances may occur without any physical concomitant; and on the other hand, there may be motor irritative symptoms in the form of twitchings, without involvement of the psychic sphere. A regular causative connection between the convulsive seizures and the psychic disturbances does exist. Hence it is generally of minor importance whether or not the transitory disturbances of consciousness are preceded or followed by convulsions, or whether they have originated independently. Again, intercurrent convulsive seizures may appear in the course of an epileptic psychosis, without causing any alteration of the clinical picture.

Lemerling showed that the essential feature of all the acute epileptic psychoses consist in an alteration of consciousness, with numerous transition forms from the grave confusional states to the "dreamy" states. The severest form is characterized by the total inhibition of consciousness, marking the last degree of psychical disturbance in the classic convulsive fit. The mildest form consists in the fluctuating moods of epileptics, in which a marked disturbance of consciousness can no longer be discerned. Thus the acute psychic disturbances of epileptics may be grouped as follows:

First: Great Convulsive Seizure,

Second: Rudimentary and Atypical Seizures,

Third: Petit Mal,

Fourth: Confusion, (stupor and delirium),

Fifth: Paranoid Conditions,

Sixth: Dreamy Confusional States with Compulsory Impulses,

Seventh: Depression, or Euphoria.

The classical convulsive attack excludes all conception of the external world, the consciousness of personality, memory, reflection or voluntary action. Even simple reflexes to external stimuli are in part absent. In the atypical attack, these deep seated disturbances are shortened and incomplete. Sensation returns sooner, or is altogether preserved, thus permitting voluntary actions up to a certain limit.

Presence of Power of Discrimination, Recognition of Hostile Influences. By various modifications, the atypical attack approaches the attack of *petit mal*, in which a severe alteration of consciousness is never present for more than a moment at a time. On the other hand, the association of ideas is badly interfered with, and the sensation of personality is lost; but even a complicated action may be performed, as it were automatically, though remaining inexplicable without some assistance from mental processes, and frequently distinctly affected by external influences. In the transitory disturbances of consciousness, (dreamy states, mental automatism) which are closely akin to the *petit mal* attack, the conception of the external world becomes more and more evident, reaction toward it becomes more and more complicated, and the mechanical automatism is finally lost entirely, until all that

remains is a so-called confusional state, in which it is again more or less possible to communicate with the patient by means of speech and to examine the disturbances of his mental processes. Interference with the higher psychic actions, and with the perception of sensory impressions, down to mere reflex processes, do not by any means stand in a definite ratio to each other. For instance, the reaction of the pupils to light may be preserved where consciousness is lost, and it may be absent when consciousness is only slightly altered. In a similar way, there is frequently analgesia in epileptic psychosis, whereas sometimes during a convulsive seizure the patient will wince after a pin-prick or a sprinkle of water.

The most characteristic feature of all confusional states consists in the inability of the patients to adjust themselves to the external world. The perception of time and space is more considerably interfered with than the consciousness of the *ego*. These confused patients may not know where they are; they may fail to recognize the persons surrounding them; they have lost all sense of time; but they almost invariably designate themselves correctly, as long as they are capable of an answer. Memory of past events is usually but little affected, and this probably accounts in part for the correct statements of their personal affairs by confused epileptics,—if they answer at all. Upon closer investigation, the essential alteration of consciousness in epileptic confusion is found to consist in a peculiar disturbance of the mental processes, which renders difficult or even impossible the assimilation of new sensory impressions and their junction with former memory pictures. Thus the perceptive

faculty is interfered with, and at the same time the tendency to mental processes is inaugurated; manifesting itself in kaleidoscopic delusions and hallucinations. This cardinal symptom was interpreted as a disturbance of the association of ideas by Zichen, who considers the epileptic confusional state in general as a variety of acute paranoia. He differentiates three forms of disturbed association; namely, inhibition, fugitive ideation (flight of ideas) and lack of coherence. (*Monatsschrift, f. Psych.—Neurol.* 18. 183, XI, pg. 55, 393). In epileptic confusion, there is invariably a combination of incoherence with one of the two other symptoms. In stupor, the inhibition predominates; in delirium, incoherence is more evident. Inhibition is recognized by the increased time of reaction to sensory impressions of all kinds; best seen in the answering of very simple questions along the line of personal statistics. The entire clinical picture of epileptic confusion has for its most important feature the incoherence of the mental processes. In the graver forms, this is so plainly marked in the general behavior of the patient, as to put the characteristic stamp upon it. Limerling says accordingly, that the suspicion of an epileptic change of consciousness is always suggested by the rapid sequence of apparently systematic indifferent manifestations, and strange unexpected actions, often having the character of violence. (*Berl. Klein. Wochenschrift* No. 42, 1895).

In fractures of the femur below the lesser trochanter and in fractures near the upper end of the radius where one fragment is short, it is very liable to be tilted and rotated out of position by muscular action, and this should be obviated by bringing the longer fragment into line with the displaced shorter one, as advised by Cheyne.

THE SEWAGE MENACE IN NEW YORK HARBOR.

BY

MAJOR CHAS. E. WOODRUFF,
U. S. Army.

It might be considered an exaggeration to state that New Yorkers are filling their magnificent harbor with sewage deposits, but it is a fact that surveys of one channel show that it fills at the rate of six inches a year with mud so foul smelling that it can not be dredged out in summer, as the workmen cannot stand the odors. Their health compels postponement of the work until cool weather. Unless immense sums of money are spent to keep the channels open, the city in time will cease to be a seaport for large ships.

The recent revelations of the dreadful mortality due to diseases carried by flies from the sewer outlets should awaken us to the urgent necessity of ending the nuisance at once, but the time has now come when vast commercial interests are jeopardized, although the saving in life and health would pay in great part for the costs of the change to a better system. We have been living in a fool's paradise, for we have inherited the grandest harbor in the world—a harbor which has made New York the metropolis of the Western Hemisphere—yet with inconceivable shortsightedness we began some seventy-five years ago, the fatal policy of filling up the bay upon which we depend for existence. The results are appalling, for the whole floor of the harbor has become a huge cesspool with a layer of deposits varying from a few feet up to 15 or more, and some beaches which were clean gravel in the memory of living men are now buried under 10 or 12 feet of foul mud.

People do not realize the immense amount of solid material flushed through sewers. One hundred years ago, most of the rain water falling on the island sank into the soil and made its way slowly into springs and streams and then flowed as clear water to the rivers, but since the ground has been covered by a solid surface of streets and houses, all the rain flushes at once into the drains and carries with it the street washings which settle to the bottom, for the tides are not swift enough to carry it to the ocean. There is little or no sewage beyond the outer harbor. Add to all this, the solid excreta of some three or four million people, and it can be readily seen that in a calculable number of years, unless constant dredging is practiced, the whole harbor will be a mud flat, through which some tortuous channels are scoured out by the to and fro movements of the sluggish tides which will also pile up a huge bar at the outlet. Even now, when we read of a ship running into the mud, it would be more correct to say that it is merely recent sewage deposits.

These deposits have also destroyed the immensely valuable fisheries and have so greatly polluted the oysters, that many people have now given up these wholesome articles to the great detriment of the trade and their own health.

Over fifty years ago, European nations began the policy of forbidding communities from polluting water courses used by other communities further down stream, but we have just made a beginning—and a very inefficient beginning at that. We have been industriously ruining every beautiful stream and crystal lake under the false idea that they were nature's sewers, for nature only pours clean water into the rivers until

man comes along and removes the surface vegetation so that rains may wash away the soil. It is high time that we give up this delusion and realize the fact that fresh water streams are drinking water to be kept clean, for we will soon be without safe water supplies except at enormous expense. It seems stupid to pour filth into the drinking water and then construct extensive filters, when for less expense the solids of sewage could be destroyed before the water is poured into the streams.

The new policy of stream protection must be made universal at once, for we are losing valuable time, and extensive sewage systems on the old plan are now being devised which must eventually be discontinued at enormous cost. Indeed there may be an outcry at the expense of cleaning out the deposits from ship channels.

This revolution will no doubt be so expensive as to raise doubt as to its practicability, yet cost what it will, New York harbor must be preserved, for the real estate losses will exceed the cost of sewage changes, many times over. Much of the value of New York real estate is fictitious anyhow, kept up by the cheapest sort of sewage disposal, and then calling on the nation to clean out the cesspool. As far as street cleaning is concerned, it is partly a matter of heavily fining everybody found throwing dirt into the street, and it is practicable to remove the unavoidable dirt so thoroughly that but little is left for the rain to wash into the harbor. This will be cheaper than dredging it out of the channels—and the nation may object in time to being taxed to keep up New York real estate values. Of course the channels are being made better every year and the harbor is better than it was fifty years ago.

but it is appalling that we should deliberately pour solid materials into channels we have excavated at such expense of money and labor.

The disposal of the sewage does not involve insuperable engineering difficulties. Small towns are doing it successfully, and it is only a question of constructing a sufficient number of septic tanks. These can be put under the streets even, and if properly ventilated they are harmless. If kept at the proper temperature summer and winter, saprophytes dissolve all the solids and a clear solution of nitrogen salts flows out. If the harbor were warm enough it would be a huge septic tank now, but unfortunately, the low temperature of winter keeps the material in "cold storage" and it collects in too great an amount to be destroyed in summer. The nitrogen salts discharged from "septic tanks," might even act as fertilizers, increase harbor vegetation and restore the fisheries to their original value.

In every way at which it is viewed, the proposed change in the system of sewage disposal, though it may be expensive at the start, will be economical of health, life and treasure. As it must come in time, the beginning should be made now, to prevent further damage to our streams and harbors. The time should come when armies may camp anywhere in the United States and safely drink the water of the streams. At present, military sanitarians consider every water guilty until proved innocent. As we cannot expect a continuance of peace forever, it is wise to think of even the eventual disaster of a war in which safe drinking water is unattainable for the nation's defenders. New York, being the nation's main city, should take the lead in the installation of modern systems of

destroying the solids of its sewage. All thought of carrying the sewage out to sea, must be given up on account of the prohibitive expense, and the fact that it does not end the nuisance but merely removes it a little further away, where it may injure other shore communities. The present system must be ended, not mended.

OSTEO-MYELITIS.

BY

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New York City.

It is a sad fact that this acute infectious condition is often overlooked until it has progressed to a stage where not only great local damage is caused, but danger to life itself. Oftentimes a variety of diagnoses have been made, ranging from growing pains (in children) to rheumatism, when osteo-myelitis was the underlying condition.

It is not with any desire to go into the pathology of this condition, but simply to call attention to some of the special minor points, and to emphasize the fact that there is no need for a slipshod diagnosis, that this article has been written.

No delay is permissible in the management of this condition, and every day's delay adds to the gravity of the case.

There are three prompt indications to be followed, viz.: prompt incision, free incision, and thorough drainage.

Secondary abscess may form in acute osteo-myelitis, therefore, it is absolutely essential to be on guard in making the incision. If in cutting down to the bone, but little pus is evacuated, much still has been accomplished because an outlet for the streptococcus has been provided, drainage has been supplied and the further development of the disease is possibly prevented.

If the disease has progressed to the extent that there is necrosis of the bone do not wait for the periosteal sheath to acquire strength enough to preserve the continuity of the limb. Always remove the sequestrum as soon as possible, for if permitted to remain it will injure the contiguous parts. Always splint carefully and bandage to maintain the parts in position and to prevent fracture.

The following case is typical of acute osteo-myelitis with considerable destruction of the tibia which might have been prevented had a prompt diagnosis been made.

CASE I. Boy, aged 14, apparently in good health, had been quite active in playing ball and other childish games; returned from school early in the afternoon, complaining of headache, nausea, and pains in his limbs. A physician was sent for who found the boy with a temperature of 104; prescribed aconite and cold sponging. Gave a diagnosis of probable typhoid fever. The child was restless during the night, became delirious, and consultation was held but on account of the general muscular (?) pains and delirium it was a question whether the case was one of cerebro-spinal meningitis or typhoid fever. These symptoms practically continued about the same for days, until I saw the case. A careful examination revealed acute osteo-myelitis of the right tibia. The diagnosis was made by the extreme tenderness and tense swelling. Free incision was made and a quantity of pus was evacuated. One-third of the sheath of the tibia was involved; this was curetted and lightly packed with iodoform gauze so as to allow free drainage. The symptoms rapidly subsided but it was many weeks before the case fully recovered.

Attention is called to this case because it is of too frequent occurrence that a slipshod diagnosis is made without proper physical examination.

CASE II. Was an acute osteo-myelitis following a supposed fracture of the left

fibula. This boy, 18 years old, after a fall, consulted a physician who diagnosed simple fracture of the middle of the left fibula, which, by the way, is almost an unheard of accident, as the fibula in this region is amply protected and only under the most direct violence would we suspect the presence of fracture. The limb was placed in a plaster of Paris cast and remained there for ten days. The patient in the meantime suffered fever and intense pain. He was brought to the hospital and placed under my observation. The cast was removed and a diagnosis at once made from the tense swelling and exquisite tenderness of acute osteo-myelitis.

A free incision was made and a quantity of pus evacuated and the fibula found to be necrosed from two inches below the head down to 1½ inches of the malleolus. The incision was extended up and down to permit the removal of the diseased bone.

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SENSISM AND COGNITION.

A Reply to Dr. Duncan MacDougall.

BY

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IN AMERICAN MEDICINE (April, 1907) Dr. Duncan MacDougall published an article entitled an "Hypothesis concerning Soul-Substance, Together with Experimental Evidence of the Existence of Such Substance," in which the main inference was that the soul is ponderable and therefore material. In the same journal (November, 1907) I discussed this article and opposed its deductions. Dr. MacDougall replied to my criticism, in the June number of AMERICAN MEDICINE, and this is my final comment.

Despite his explanation of the original article it still remains true, as I showed in November, 1907, that his deductions rest

upon a single case, and this is much too slight a foundation for any serious scientific inference. There were five experiments. Of the second case he himself said, "we had great doubt from the ordinary evidence to say just what moment the patient died." That is, he himself does not know whether the patient was dead or not when weighed. That case, therefore, is irrelevant.

In case third, he says there was an inexplicable loss of weight "co-incident with death," and, he adds, there was "an additional loss of an ounce a few minutes later." This second loss destroys all value in that case also. The fourth case he himself rejected. The fifth case lost weight at "death," but regained it later. That case also is of no use. The whole material, therefore, reduces to a solitary instance, and upon this tenuous foundation he builds up his paper. I drew attention to these feet of clay in his statue, but he ignores that flaw with admirable courage.

He says "in his second objection Dr. O'Malley asserts that I said or supposed that because I could not otherwise explain the loss than as probable soul-substance, therefore no other explanation was possible." That is not an exact statement. I said, "the article supposes that, because Dr. MacDougall could not explain the loss of weight, there is no possible explanation." I did not accuse anyone of egotism: the accusation was of involuntary inscience.

He says further, "The doctor makes the assertion that substance as such has no necessary connection with space, and then cites a theological dogma concerning God as the absolute substance to prove his assertion." That is true. He continues, "Now the doctor knows very well that the scientific

conception of substance has nothing whatever to do with a definition of the absolute." I do not know any such thing, nor does anyone else know it. From the days of Aristotle to 1908 every sane philosopher that ever wrote (except Mrs. Eddy) agrees that substance is something that can exist in itself, which is primarily and simply being. The absolute also is that, and "science" grants this postulate. There is a vast difference between a comprehensive understanding of the Absolute, and knowing that the Absolute is a substance, a person too. If by "science" the doctor means physical science, and if he infers that physical science does not ordinarily attempt to define Absolute Being, that is all true enough; but it has nothing at all to do with the present argument. This argument itself has no connection with physical science, except that it started from a physical experiment: it is altogether a question of metaphysics. Dr. MacDougall draws broad metaphysical conclusions, which would destroy the simplicity and spirituality of the soul, establish materialistic sensism as a philosophic system, and involve much more important principles, all from one doubtful application of a balance to a dying tuberculous patient. That is not physical science, nor metaphysical.

He thinks that theology deals solely with matters of faith. The entire complex treatise of natural theology, which treats of the existence of the Absolute Being; the eternity, infinity, omnipotence, unity, and other attributes of the Absolute Being; the relations between creator and creature; and so on through a hundred subjects, have no connection whatever with faith. There is, then, a science of theology which is purely rational; and even that part of the-

ology which has regard to matters of faith does so through pure reason. When, therefore, I say God is Absolute Being or substance I have no more reference to faith than to trolley-cars.

Dr. MacDougall gives no definition of substance except that it is a space-occupying body. This is an inference from Sensism, which he does not prove, and which he can not prove by merely saying he himself can not understand any other definition. Many substances are necessarily space-occupying, not as substances but as material substances; others, like volition, intellection, futurity, and a thousand similar, have no necessary connection whatever with space for existence or "thinkability." He perpetually confuses substance with matter, but they are as different as wisdom and an angry woman; and this is so patent a platitude of rudimentary philosophy that it is embarrassing to insist upon it. Futurity, for example, is a substance as real in the mind as a gas bill is outside the mind. The difference between a mere indifferent accident and murder is only an abstract intention, but that immaterial intention, which has no connection with space, is real enough to hang a man in full justice and space.

I said that "Space is the superficies of the containing body considered as immovable and immediately against the located body. Place is the bodily surface with reference to the interval included. Space is this interval with reference to the bounding surface. Since beyond the finite world there is nothing, there is no superficies of a containing body that touches it, and the world as a unit is not in space; furthermore for the same reason it is not in any place. So, a substance that is not only not in space, but

not anywhere, yet actually not potentially existing, is thinkable." Dr MacDougall calls this statement one of the worst instances of the *petitio principii* he ever read. He exaggerates. He does not object to the definition of space, but the words "beyond the finite world there is nothing" annoy him. He says they are meaningless, that "it is impossible for the human mind to entertain the conception that beyond the finite world there is nothing." I assure him that if he will only look up the definition of *finite* and *nothing* in a popular dictionary the difficulty will cease. The created universe has a limit, it ends somewhere, otherwise it would be infinite, absolute being, God; it would be infinite and extended, simple and extended at the same time, an infinite series would be possible, a supposition worthy of dementia, and surely not held by Dr. MacDougall. If the world stops somewhere, and it does, there is nothing beyond it: that is as easy to understand as that in the number 10 the figure 1 is followed by 0. How anyone can see a *petitio principii* here is a mystery to me. Perhaps he means he can not *feel* the meaning of terms like nothingness and limitation of the universe, but no one is interested in that anaesthesia.

The exact expression was "an old trick of the *petitio principii* worthy of the scholastic." Here is the dignity of ignorance lost in speech. Aristotle is the father of Scholasticism, Thomas Aquinas and Albert the Great are two of its chief teachers, Dante was a humble disciple in its schools,—four of the thousand great minds that were scholastics.

Milman, in his *History of Latin Christianity* (vol VIII), a more competent critic than Dr. MacDougall, and opposed in re-

ligion to Thomas Aquinas, said of him: "He approaches more nearly than most philosophers, certainly than most divines, to pure embodied intellect. He is perfectly passionless; he has no polemic indignation, nothing of the Churchman's jealousy and suspicion; he has no fear of the result of any investigation; he hates nothing, hardly heresy; loves nothing, unless perhaps naked, abstract truth. In his serene confidence that all must end in good, he moves the most startling and even perilous questions, as if they were the most indifferent, the very Being of God. . . . He has nothing of the boastfulness of self-confidence, but in calm assurance of victory, gives every advantage to his adversary. On both sides of every question he casts the argument into one of his clear, distinct syllogisms, and calmly places himself as Arbiter, and passes judgment in one or a series of still more unanswerable syllogisms."

Of this stupendous genius, by far the greatest philosopher the world has produced, not excepting Aristotle himself, of Albertus Magnus who was his teacher, of Dante, Bernard of Clairvaux, Anselm, Abelard, Peter Lombard, Duns Scotus, Bonaventure, Suarez, Bellarmine, de Lugo, Balmez, the most brilliant intellects of a thousand years, Dr. MacDougall speaks with a slur. The only defence he has is to plead an utter ignorance of their teaching, and if he pleads that what right has he, in the name of all that is decent, to attack their doctrine which is the direct contrary of his own?—*si liceat parvum componere magnis*. To plead ignorance of their doctrine is a poor excuse even for one who presumes to upset the tremendous truth of the spirituality of the soul with a

single experiment on a contraption of cast steel made by those respectable folk, the Fairbanks Scale Company. I grant that the scholastics wrote in a technical mediaeval Latin, that their terminology is difficult, but that does not excuse rash assertion. The beauty of Greek literature is concealed in Greek.

Dr. MacDougall next attacks my definition of personality. I said anything which can have a separate existence is a substance, every existing substance is individual. When an individual is complete in itself, has an entire nature, and is intrinsically independent, it is an hypostasis. If further an hypostasis is intelligent it is a person, it has personality. An intelligent being, human or superhuman, is a person. That is not my definition originally, it is as old as eternity. Dr. MacDougall objects to my definition, yet he says himself, "My definition of personality would be a human individual." I presume he means a live human individual, and the only thing that differentiates a live human individual from the remainder of the world is intelligence (*homo est animal rationale*), therefore an intelligent individual is a person. He holds as I do, yet he attacks my holding merely because I hold it. Possibly, however, he thinks that a person is not an intelligent being although it is a human being, that there is some other quality beside intelligence in a human being which makes that *homo sapiens* a person. What that quality is he does not tell us, but it must be something else, because my definition should be wrong on general principles.

He says if my "definition of an hypostasis is correct, any animal is a person, unless I deny that animals have intelligence." Here he shifts from person to hypostasis,

but the inference is that he meant to use the word person. However, I should like to go on record as holding that "animals" (brutes) are not intelligent. No one but antivivisectionists (those childless matrons, or male or female old maids whose hearts rest sweetly and ultimately in the family cat, or physicians for revenue only) whose opinion when it is not valueless is insolence, maintain that brutes are intelligent. Such people can not differentiate between instinct and intelligence, *e non raggionam di lor*, as Dante, the scholastic said.

Dr. MacDougall continues, quoting my words, "'The notion of a space-occupying body is altogether outside the essence of personality.' Now we know nothing whatever of essence of personality as rendered to consciousness in experience." If that "we" is editorial it may pass, but if in the "we" he includes the philosophic brethren, he has certainly missed some excellent treatises on essences in the course of his extensive reading. You can not place your thumb on an essence, and some minds can not understand any thing they can not claw over, but to say we know nothing of essences, or particularly of the essence of personality, is not worth denying. He knows nothing of essence, but in the same paragraph he says essence and notion are synonyms. This is one of the few real arguments in the whole article; and the "we" is surely editorial.

He says my words are equivalent to these, "The *notion* of a space-occupying body is altogether outside the *notion* of personality." A complete notion of a thing does suppose a notion of its essence, but to say that a notion of an essence and the essence itself are the same thing is like calling an amputation of a toe an

appendectomy, which is so misleading that it is false.

I am forbidden to use the concept of God as a person because when we speak of God as a person we employ the term analogically. Suppose this were not a distinguishable proposition, is God to be considered not one, not infinite, and so on through the attributes, because we use these terms analogically? Is there a contradiction between analogy and truth and reality? When we say God is an intelligent being, or a person, we speak of a reality, although intelligence and personality may be applied to God analogically. I am somewhat surprised that he permits the use of the term God. God in his system must be a space-occupying body, and that is certainly the queerest notion of God evolved since the days when our forefathers had gods of wood, space-occupying bodies.

In opposing my proof of the soul's simplicity and immateriality, drawn from the fact that we can have abstract indivisible ideas, he says "Abstract ideas are states of consciousness like all other ideas." If they are states of consciousness they exist. But, in the same sentence he says "ideas have no existence in themselves and are but representatives of modifications of consciousness." First they are states of consciousness, then they are representative of modifications of consciousness, then they are not these, because they do not exist. Existence, according to Dr. MacDougall is something that has extension, parts; we can not find any parts in the abstract ideas, simplicity, truth, purity, therefore there is no such thing as simplicity, truth, purity; moreover, as abstract ideas they do not exist. There may be a simple, true, pure man, who has no simplicity, truth or purity.

I sorely suspect that this whole discussion is a satirical joke, and that the doctor has been drawing me out. We have gone so far, however, we may as well as not end it.

Berkeley (*Principles of Human Knowledge*) in a passage directed against Locke (*Essay*, bk. iv. ch. vii, § 9) confuses an intellectual concept, which is abstract, with a phantasm of the imagination, and Dr. MacDougall falls into the same error. We can not have an abstract or universal phantasm, but some of us have universal or abstract ideas hourly. The concept represents the essence or nature of a thing, prescinding from accidental individualizing conditions. The phantasm reproduces the object with concrete marks. The concept is universal, one in many, representative of all objects in a class, because it includes only the essential attributes of the object. The phantasm presents one individual of some peculiar shape, colour, and so on. The concept because it has to do with essential attributes is immutable, necessary; if changed it is destroyed; it abstracts from time, and it was always possible. The phantasm is mutable and contingent.

Such concepts may not exist *a parte rei* as sensuously tangible or visible, but they are so real that if they did not exist no science would be possible, even physical science, that youngest and most foolish of the children of wisdom—a good thing in itself when it minds its own business. Without these concepts Dr. MacDougall's argument, such as it is, would be impossible, every sentence of which contains abstract realities clamouring unsuccessfully to prove their own nonentity.

Abstract ideas, he says, his "modifications of consciousness are by no means indivisible, or simple acts of the mind or con-

sciousness." He gives no proof of this assertion, and *quod gratis asseritur gratis negatur* is a scholastic saying applicable here. He dwells upon the fact that our ideas are derived in remote origin from concrete objects, and he twists my words into an assertion I never dreamed of, namely, that our ideas have no remote connection with matter. I said, it is true, "we apprehend abstract truths, which have nothing to do with matter," but when I said this the obvious meaning had reference to the finished product. While the mind is in the body it starts its ideas from matter, but the abstract idea is such just because it is abstracted away from matter, cleared of matter. The bloom on a girl's cheek may have its remote origin in a dish of pork and cabbage, but the bloom is not cabbage; nor is abstract justice the same thing as a just man.

Again, I said "the same soul in self-consciousness is at once fully subject and object of the mental action, an operation utterly impossible to matter." Dr. MacDougall's comment is, "If we knew exactly the ultimate nature of matter, which we do not, it might be very well to make the assertion. . . . How do we know that such an operation as self-consciousness is impossible to matter?" We know it for two reasons: first, that it is an abstraction from matter, therefore not matter at all; secondly, we know it from the fact that ever since the creation of the first nebula matter has never shown the slightest tendency to self-consciousness; its parts attract or repel one another or passively transmit forces, but all that is as far below self-consciousness as municipal politics is below decency, farther even. Reflection upon our own conscious states is essentially

beyond sense, the highest development of matter. We observe, study, analyse our own thoughts and sensations; we compare these with previous states of mind or body; we know they are our own. We know that our own senses never did this, and the aeons of time since the creation of man have furnished experience enough of this to make any other supposition mere childish dreaming. Furthermore, if Dr. MacDougall knows nothing of the ultimate foundations of either mind or matter, and he says he does not, why is he settling the whole difficulty with his Fairbanks scale?

If he wishes to find far better arguments against his sensism than I have presented I refer him to Balmez's *Fundamental Philosophy* (bk. IV, chap. II) where the sensist theories of Condillac are refuted; and this refutation is just as effective when applied to the English empirical school from Hume and Hartley to Bain and Sully. Lotze also (*Metaphysics*, bk. III, and *Microcosmos*, bk. II) shows the fallacy of sensism. Let him see also Thomas Aquinas *De Anima*, lib. III, and his *Contra Gentes*, lib. II; Boedder, *Psychologia Rationalis*, §§106-112; Mivart, *On Truth*, ch. xv; Piat, *L'idée*; Peillante, *Théorie des concepts*, chaps. 2, 3.

As to the reality of universal or abstract ideas there has been always serious discussion since the days of Plato. All philosophers admit that these ideas exist in the mind, but Plato held that they exist formally as separate from the mind. Aristotle and Thomas Aquinas refuted this doctrine. William of Champeaux, who died in 1121, and some modern German pantheists, represent those who hold that one essence is common to all individuals of a species. The Nominalists, another group, maintain

that beyond the mind nothing exists but concrete objects. Groups of these resemble one another, and we give a common name to this group. They are apprehended by individual sense-impressions. This theory appropriated by modern philosophers like Hobbes, Bain and Sully, was first advanced by Roscellinus in the eleventh century.

Conceptualism is another theory, which has had various forms from the days of Abelard (1079-1142) to Kant, and which rejects the mechanical basis of sensism and nominalism; it makes, however, the universal much too strictly a subjective creation of the mind.

Then there is Moderate Realism, formulated first by Aristotle, the most satisfactory of explanations. In this theory universal ideas are abstractions with a genuine basis of reality. The best exposition of the doctrine is given by Thomas Aquinas in *De Anima* and in his *Summa Theologica* (*pars prima*). G. H. Lewes (*Problems of Life and Mind*, vol. I) is also a moderate realist, and he presents his views very cleverly.

The whole matter is intimately connected with the theories on the origin of ideas, which is by far the most difficult problem of psychology. An exposition of these theories would be a history of psychology from Plato to Sully.

In cases of sprains, especially of the knee, elbow and shoulder region, it is advisable, as recommended by Sir William Bennett, to examine the distal parts for numbness, which often otherwise escapes notice. If limited or of short duration it signifies merely nerve shock, while if it persists for more than twelve hours there is great probability of a gross lesion of the nerve branch involved.

ETIOLOGY AND DIAGNOSIS.

The Tongue in Diagnosis.¹—Much may be learned says Post from accurate observation of the tongue; how much a few very old practitioners perhaps alone can tell. In the treatment of phthisis, inspection, minute and scrutinizing, of the tongue is far more important than the wielding of the stethoscope, however skilfully done. The ear gives us much information as to the amount and nature of the disease, the eye gives information, often priceless, as to the precise line of treatment to be adopted; for the tongue is the index of the state of the intestinal canal, and, if the *primae viae* are disordered, they must be put right before any other therapeutic measure can be safely adopted.

Tremulousness of the tongue may denote alcoholism; and, less frequently, lead or mercurial poisoning. This same condition may also denote muscular weakness. When seen in the early stages of typhoid fever, it indicates a grave condition of bad prognostic omen. In hemiplegia the tongue, when protruded, turns its apex to the paralyzed side. Dryness of the tongue is found in toxemia, pyrexia, diabetes and other forms of polyuria. It is swollen and indented in debility, menorrhagia and acute prostration. Usually a furred or coated condition of the tongue denotes disturbance of the digestive organs or the oncome of acute disease, especially the specific fevers.

As a rude index of the condition of the gastrointestinal canal the state of the tongue furnishes valuable information. Where the coat is thick, it is evident that absorption of food from the intestines must be very imperfect through the layer of dead epithelia cells, and our efforts must be directed toward removing this obstructive layer. When the tongue cleans, then we know that absorption and assimilation is going on satisfactorily. When the tongue remains coated, we aid the natural efforts to remove the fur with a mercurial laxative, best united with some vegetable cholagogue, as podophyllin or iridin followed by saline laxatives, and repeated to effect. In scar-

let fever the tongue often assumes a strawberry appearance. In almost every case of indigestion with a furred tongue constipation is present, and must be considered in the therapeutic plan.

The raw, or bare, tongue is a condition that, I am afraid, does not often receive the consideration which, from its gravity, should be accorded to it. Here the superficial structures of the tongue are denuded, more or less completely, of the natural epithelium. Both in acute and chronic conditions the absence of the epithelial covering, whether slight or considerable, should receive the keenest attention of the practitioner. As long as the tongue is raw or bare, the line of treatment to be followed is that of bland, unirritating food, with alkalies and sedatives to the gastrointestinal tract such as bismuth, etc. As long as this condition remains, tonics are useless and are not assimilated. It is comparatively easy to get rid of the layer of dead epithelial cells of the coated tongue, but it often taxes all our resources to restore the epithelial coat to its integrity when the tongue is raw.

The surface of the tongue must be observed. The fissured tongue points to chronic disease usually, probably a lesion of the kidneys, inflammatory in character. This condition must be distinguished, however, from the fissured condition which occurs in the tongue of those persons who habitually take all their drinks hot. Deep fissures or plaques are suggestive of syphilis. In certain cases of menorrhagia there is a peculiar silvery sheen and the tongue is broad and swollen.

Diagnosis of Breech Cases.¹—In the diagnosis of breech cases the chief points to be noted are the following. On inspection the long axis of the uterus will be noticed to be in the long axis of the mother's abdomen. Palpation will reveal the presence of a hard, round, smooth, and solid tumour (the head) occupying the fundus. This tumour will be found to ballotte freely and to move independently of the body. In the pelvic grip the tumour is found to be

¹Wm. C. Post, M. D., Iowa Am. Jour. Clinical Medicine, September, 1908.

¹Nelson Davie, M. B., The Hospital, p. 581, Aug. 29, 1908.

well above the pelvic brim. It is larger, softer, and more irregular than the tumour in vertex presentation, and following it up by palpating along the dorsum of the child there is no interruption or depression to be discerned. The pelvic tumour does not ballotte freely, and moves with the body, thus contrasting with the fundal tumour. On auscultation the foetal heart is heard above the umbilicus to one or other side according to the position of the foetus.

The vaginal examination is most important in the diagnosis, and the following points can usually be made out in the early stage before a caput forms. If the membranes are intact there will be an irregular protrusion of the bag of membranes through the os. The presenting part will be found to be high up and not fixed. The trochanter can usually be felt. Next, if one can make out the bony triangle formed by the two ischial tuberosities and the sacrum of the foetus, there will be no hesitancy in deciding that the case is a breech. Within this triangle the finger may enter the anus, which must be distinguished from the mouth by the absence of the alveolar ridges and the tongue and by the presence of a sphincter grip and of meconium staining the finger. If the child is of the male sex the scrotum can usually be felt. If the perineum is much swollen, so that the parts cannot be felt distinctly, feel for a foot. See that there is no prolapse of the cord. Extreme care must be exercised in the examination and everything made out as gently as possible so as to avoid rupturing the membranes.

The Pathogenesis of Tabes Dorsalis.¹

In an interesting and comprehensive paper on the pathogenesis of tabes dorsalis Williams draws the following conclusions: 1. Tabes dorsalis is a secondary degeneration in the posterior columns, due to a chronic meningitis, probably of syphilitic nature. (2) The arrangement of the meninges surrounding the nerve-root render it particularly liable at that point to mechanical or toxic injury. (3) The unequal incidence on different fibres of the posterior root is

probably due to unascertained peculiarity of structure or arrangement of fasciculi, rather than to any selective toxic influence. (4) The lesions tend toward resolution and arrest. (5) With this arrest, regeneration tends to occur in the nerve-roots, the amount in the anterior root being considerable, while that in the posterior root is less in amount and is functionally insignificant. This difference is shown to have a basis in anatomic fact. The trophic centre of the anterior root is the pyramidal cells in the anterior horn. Upon the absorption of the meningeal exudate, the cells push out new fibres, which make their way along the old paths to the muscles. In the posterior root, on the other hand, the portion of the fibre distal from its trophic centre, the posterior root ganglion, loses its neurilemma on entering the cord. This absence of neurilemma prevents the regeneration of the fibre, when the trophic centre has recovered function. The regenerating fibres can be shown to stop at the point of reflection of the pia mater at Obersteiner's ring. (6) The otherwise unexplained vaso-motor and cranial nerve symptoms are shown to be necessary concomitants of the tabetic process.

Calmette's Ophthalmic Reaction.¹—Parker concludes his very comprehensive paper as follows:

1. The Calmette ocular tuberculin test is of as great diagnostic importance as any other single test.

2. A positive reaction is indicative of a tuberculous focus somewhere in the body.

3. The test is uncertain in patients under 2 years of age, in whom the cutaneous test of von Pirquet is most certain.

4. The test fails in advanced cases of tuberculosis, but there is little need of it here for diagnostic purposes.

5. The initial instillation should be preferably under 1 per cent. strength, in order that severe inflammatory conditions may not follow its use.

6. If necessary to make the second and stronger test the instillation should be made in the eye not previously used.

¹Williams, Am. Jour. of Medical Sciences, Aug., 1908.

¹H. C. Parker, M. D., Jour. A. M. A., June 27, 1908, p. 2127.

7. The consensus of opinion seems to be against using the test in an eye not wholly normal.

8. After-complications have occurred from the use of the test, but these have entirely cleared up in a varying length of time. These conditions are not so frequent when the initial test is made with a solution under 1 per cent. in strength.

9. Recent investigations have shown a greater number of ophthalmic affections due to tuberculosis than formerly supposed, and in the Calmette reaction we have a simple means of differential diagnosis which should be thoroughly tried.

10. The ocular reaction is especially valuable for ascertaining the tuberculous nature of cases of phlyctenular keratitis and conjunctivitis, episcleritis and scleritis, chronic iritis and iridocyclitis, interstitial keratitis, and chorioiditis.

11. A 1 per cent. solution of Koch's "old" tuberculin is nearly as good as the Calmette solution for diagnostic purposes.

12. The test in the hands of various observers has given such uniformly excellent results that its value is practically assured.

The Differential Diagnosis of the So-called Chronic Rheumatisms.¹—Hatch gives the salient points of different types of chronic rheumatism as follows:

1. *Chronic villous arthritis* is caused by injury or constant strain. It is not a general disease and not progressive. The hypertrophied villi can be felt on each side of the patella in the knee, which is the joint most frequently affected.

2. *Atrophic arthritis* is a general and a progressive affection. It commonly begins in the fingers in the second interphalangeal joint and spreads to larger joints later. Marked deformity results from this affection, and radiography shows atrophic changes in the joints.

3. *Hypertrophic arthritis* is found in elderly men chiefly, and affects the 1st interphalangeal points, the knees, hips,

spine, and shoulders. The disease is usually confined to one joint and is not progressive. Lipping and bony outgrowths are found in this variety, and Heberden's nodes may be present.

4. *Infectious arthritis* caused by the presence of organisms or their toxins in the joints. The onset is usually sudden, accompanied by rise in the temperature and pulse. Two or more joints are usually affected, but the disease does not tend to spread further. There are no bony changes, but ankylosis may occur from adhesions.

5. *Gouty arthritis*, which is very rare, and is characterized by deposits of urate of soda in the soft parts around the joint.

Mistakes.¹—There is no disgrace involved in making mistakes, says the *Medical Standard*. Certainly there is no surrender of dignity implied in admitting them and making proper use of them. And no considerations of false pride should restrain the contributor to medical literature and medical education from declaring the whole truth about his personal experiences, even though it includes (as it undoubtedly will) the exposure of grave mistakes. If there is need of more genuine frankness as between the physician and the patient, and as between the medical man and the public, there is equal need of more genuine frankness as between members of the profession themselves in their presentation and discussion of medical subjects.

Nobody in the profession is expected to know everything or to be infallible; only prigs are judged by either standard. In the case of the epitaphs on the tombstones of the dead there is a sentimental consideration that compels an observance of the old Latin maxim "de mortuis nil nisi bonum." So that the cases are not really parallel. In science there is no place for such sentiment. The calm, dispassionate recounting of an error, how it came to be made, and how discovered and remedied, is often of infinitely more educational value than the glib recital of a series of apparently faultless achievements.

¹Edward S. Hatch, M. D., New Orleans Med. and Surg. Jour.

¹Editorial, August, 1908.

TREATMENT.

Pyelo-Nephritis.¹—Inflammation of the kidney and of the pelvis is generally the result of a lesion of the bladder, the prostate, or the urethra.

Under the influence of certain conditions not yet well known, the microbes ascend the ureters and infect the renal organs. Of all the exciting causes, says M. Pousson, the most frequent are assuredly affections of the bladder, the prostate, and the urethra. Those of the prostate (particularly senile hypertrophy) and of the urethra, influence the kidney by the obstacle, more or less pronounced, they present to the emission of urine. As to vesical disease, it constitutes a real danger for the kidneys, by reason not only of the troubles of micturition, but also of the septic germs which infest the urine. Gonorrhœal cystitis is particularly liable to provoke pyelo-nephritis, since, according to Finger, it is observed in 18 per cent. of cases of blenorragia.

The clinical variety described under the name of painful cystitis, by Guyon, becomes complicated frequently with pyelo-nephritis by reason of the reflux of urine into the ureters at the moment of the sudden and violent contractions of the bladder.

The lesions characterising pyelo-nephritis are of two kinds. Sometimes they are only the signs of sclerous infectious nephritis; the kidney is plunged in a sort of magma, diminished in volume and contracted; to the cut, cysts appear, containing puriform liquid, while the pelvis is filled with purulent urine.

More frequently the kidney is voluminous and hypertrophied; the pelvis is dilated, and the walls adhere to the neighbouring parts; its cavity is full of fetid pus. The cortical structure of the kidney presents on section, greyish streaks or ecchymotic spots disseminated over its whole surface. The symptoms of pyelo-nephritis are characteristic, but vary according to the nature of the lesion. When there is no distension, the functional symptoms are three in number; pain, pyuria and polyuria. The pain

may be spontaneous or provoked by pressure; it occupies the lumbar region or the iliac fossa, radiating towards the bladder, the inguinal region, the thighs, etc.

Pyuria is constant, or sometimes intermittent; it is characterised by the emission of opaline urine, which decomposes rapidly, sending off a very strong ammoniacal odour. Pyelo-nephritis, with distension generally succeeds the former, and develops suddenly by a voluminous tumour of firm consistence, appearing in the renal region, dull to percussion behind, sonorous in front. Polyuria diminishes, and the temperature rises. Gastro-intestinal disturbances set in, followed later by all the symptoms of infection; red, dry tongue, dysphagia, pyrosis, diarrhœa, wasting. The skin becomes dry, and the patient finally succumbs to cachexia, or some inter-current complication.

The patient, however, has a chance of getting well if the lesion is unilateral, and the general condition satisfactory. The pelvis gradually eliminates its contents, its walls cicatrise, and little by little the local symptoms improve.

The prognosis of pyelo-nephritis varies according to the cause, the gravity and extent of the lesions, their unilaterality and the treatment.

The treatment is eminently surgical, including tapping, nephrotomy, or nephrectomy. But this treatment should be preceded by a preparatory medical treatment having for object, antiseptics of the urinary tract. Boric acid, benzoate of soda, salol, urotropin, santal, etc., may be employed in turn, according to the necessities of the case, while milk diet and certain mineral waters, Contrexéville, Evian are good adjuvants.

Excision of the Tonsil.¹—Upcott outlines the extrabuccal removal of malignant growths of the tonsil. The following is a summary of the steps of the operation in the case of a medium sized growth of the tonsil without obvious glandular enlargement. 1. While the patient is being anæsthetized inject subcutaneously 1-100 grain of atropine. Perform tracheotomy

¹Med. Press and Circular, Aug. 8, 1908.

¹H. Upcott, London Lancet, Aug. 15, 1908.

or laryngotomy, and pack the pharynx and mouth with gauze (this may be deferred to a later stage if thought necessary): 2. Make a slightly curved incision from the mastoid process along the anterior border of the sternomastoid to the level of the thyroid cartilage. 3. Raise the patient's head, tilting the table to an angle of between thirty and forty degrees. 4. Define and retract the sternomastoid. Ligature and divide the common facial vein. Open the carotid sheath at the level of the upper border of the thyroid cartilage, retract the internal jugular, and apply the clamp to the external carotid at its origin, tightening the clamp until the pulsations of the vessel are controlled. 5. Clear away all visible lymph glands and the submaxillary salivary gland. Ligature the facial vessels. 6. The submaxillary triangle is now empty. Define the posterior belly of the digastric and the posterior margin of the hyoglossus with the styloglossus passing over it. Retract the styloglossus downwards (the hypoglossal nerve is below the operative field), draw the posterior belly of the digastric with the great vessels backwards; if the stylopharyngeus comes into view it is also drawn backwards with the glossopharyngeal nerve. The superior and middle constrictors are now exposed in the floor of the wound. Carry the dissection upwards beneath the jaw, following along the internal pterygoid as far as possible. 7. Dry the wound thoroughly and then pack it with gauze impregnated with vaseline. (If tracheotomy was not done at the beginning of the operation it should now be performed and the pharynx plugged.) 8. Drill the jaw in two places near its lower border just in front of the masseter. Saw through the jaw obliquely. 9. Draw the ascending ramus outwards, cutting the internal lateral ligament if necessary. Define the lingula with the finger, and pass a hook around the inferior dental nerve, draw it from its canal and cut off. If the inferior dental artery is seen it should be secured. 10. Pass a finger into the mouth and place its tip against the anterior margin of the growth. Open the pharynx with scissors in front of the finger. Continue the incision upwards and downwards until its ends are beyond the limits of the growth. Change the glove of the infected

hand. Seize the divided edges with forceps and cut backwards from the ends of the incision until the growth can be delivered from the wound; draw it outwards and divide its posterior attachment. This step might be performed with the galvanocautery, the surface of the tonsil being cauterised as it was drawn out. 11. Suture the pharynx with two layers of stout catgut. The edges should be turned in towards the throat. The first layer should be interrupted, commencing at the bottom, the ends of the stitches being left long in order to draw down the upper and more inaccessible parts of the wound. However wide the opening may be an attempt should be made to draw together the edges. This will most likely be possible in the lower part of the wound where the pharyngeal walls are more freely movable. 12. Take out the petrolatum gauze packing and remove the clamp from the carotid. Tie any vessels that may bleed. 13. If any of the muscles of deglutition have been divided in the course of the operation they may now be sutured. Replace the ramus of the jaw and wire it in position. 14. Close the wound, leaving the upper part open for a large drainage tube which must pass down to the pharyngeal suture line and should be packed round with gauze. A smaller tube should be placed in the lower angle of the incision.

The Palliative Treatment of Fistula-in-Ano.¹—

In discussing fistula-in-ano Dawson says that palliative treatment consists of:—

1. Dilatation of the external orifice to promote better drainage. This can be accomplished by bougies, expansile tents, or nicking with a scalpel.

2. Daily attention to the anal region; thorough cleansing with soap and water, followed by a mild antiseptic, such as 2 per cent. carbolic acid, and attention to any excoriation or pruritus of the skin around.

3. Irrigation of the rectum after defæcation, so that the internal opening, if present, shall be free from contact with faecal fragments. For this a mild unirritating antiseptic should be used.

¹J. B. Dawson, M. B., F. R. C. S., *The Hospital*, p. 571, Aug. 29, 1908.

4. Injection of antiseptic along the track of the fistula. For this purpose a glass sinus nozzle attached to a tube and funnel answers best. Any of the following solutions are useful:—Hydrogen peroxide, vol. 20 per cent.; lotio acidi carbolici, 2 per cent.; lotio acidi boracis; emulsio iodoformi, 5 per cent.

5. Exhibition of cod-liver oil, malt extract, iron, strychnine or nux vomica, syrup of hypophosphites or syrupus ferri phosphatis cum quinina et strychnina; change of air, rest, or a sea voyage; prohibition of cycling, rowing, riding, or excessive walking.

6. Regulation of the bowels. For this purpose $\frac{1}{2}$ gr. of calomel three times a day is very useful, or a drachm of sulphate of soda in water on arising, or the following formula:—

R Pulveris Jalapæ Compositi. .gr. xv.
Pulveris Sennæ Alexandrinæ. gr. xv.
Sulphuris Præcipitati gr. xx.
Aquæ Destillatæ ℥j.
Theriace opt. ad ℥j.

Misce. Fiat Confectio.

Signa: A teaspoonful to be taken at bedtime.

The Dosage of Tuberculin.¹—During the past two years the decimal system of solution advocated by Denys and Trudeau has been employed by Miller, beginning with a dose of 0.0000001 gramme, and progressing by two injections a week up to a maximum dose of 1.0 gramme. This plan has been found very satisfactory, excepting that it has been found necessary to diminish the first few doses of each higher dilution in order to avoid reactions.

One gramme has been looked upon as the maximum dose to be attained in any given case. This amount, however, is purely arbitrary, and in many cases it has seemed both undesirable and unnecessary to try to push the dosage up to that point.

Often it is better to make 0.1 gramme the maximum dose and to go higher only in those patients who tolerate these large doses well and in whom it seems desirable to ob-

tain greater degree of immunity. In some patients 0.001 gramme is the maximum dose that can be attained without producing intolerance.

I have therefore come to believe that each patient is a law unto himself in this respect, and to consider each patient separately in deciding as to the maximum dose desirable. In a general way, however, I would put the limits of maximum dosage from 0.01 gramme to 1.0 gramme.

In our patients twenty-two received a maximum dose of more than 0.001 gramme and twenty-four a maximum dose of less than that amount.

The time required to reach this dosage is at least six months, and is often a year or more. The time element in the treatment is probably just as important, if not more so, than the absolute dose of tuberculin administered. The average duration of treatment in Miller's cases was six months.

ABORTION FROM X-RAY.—The x-ray must not be used on women who are pregnant, if possible to be avoided, since repeated use may be followed by abortion. No harm can be done by simple x-ray examination or exposure to the tube for purposes of radiography; but if application of the tube be made a dozen times or more, as in the treatment of cancer, death of the fetus is almost certain to occur.—*American Journal of Clinical Medicine.*

FOR INFLAMED JOINTS.—Patients afflicted by swollen, painful joints often insist upon local application. Whether the arthritis be traumatic or rheumatic this combination will give satisfaction:

Salicylic acid 12.0 (drs. 3)
Tinct. opium 6.0 (drs. 1½)
Oil turpentine 32.0 (oz. 1)
Oil cloves 96.0 (ozs. 3)
Alcohol 384.0 (ozs. 12)

Rub on the affected parts every two or three hours. Chloroform may be substituted for the oil of cloves if desired.—*American Journal of Clinical Medicine.*

¹J. A. Miller, M. D., N. Y. Med. Jour., Sept. 5, 1908, p. 443.

DIETETICS AND HYGIENE.

Exclusive Milk Diet in Treatment of Obesity.¹—Moritz is much gratified from his experience with this means of overcoming obesity. It is the simplest and easiest method, he says, as well as the cheapest, while it allows individualization and makes the least demands on the patient's attention. He has found it extremely effective, as he shows by eight typical cases. The patients lost from 16 to 46 pounds in from 15 to 81 days on the exclusive milk diet, while it had a favorable influence on complications on the part of the heart and kidneys. The heart disturbances subsided and the pulse tension and rate declined. He allows from 3 to 5 pints of milk a day, in five portions: approximately a pint at breakfast time, a glass at 10 a. m., a pint at noon, another glass at 4 p. m., and a pint at 7 p. m. The milk is taken cold or warm, as desired, and up to a pint of water may be added. This method obviates thirst and hunger, while the weight rapidly declines. Another advantage is the absence of salt from the diet. The only after effect observed is a tendency to constipation which must be combated; occasionally there is a little headache with depression if the weight drops too rapidly. Moritz gives the tabulated results from systematic analyses for three months in one case, remarking that the conditions on the milk diet are remarkably simple and instructive.

Albuminuria and Milk Diet.¹—In renal affections the value of milk as a diet is universally recognized, but unfortunately, it must be confessed, that this treatment has been greatly abused, especially within the last twenty years. Every patient presenting traces of albumin was immediately condemned to an absolute milk regime, and many accidents, according to Menuier, were the result. Prescribed without method and without any precaution, says Prof. Liguret, milk was capable of provoking grave organic disorders.

In the first stage of medical art, milk

was looked on as a two-edged weapon, very useful when properly handled, but very dangerous when employed at random. Hippocrates prescribed milk with a certain reserve, while Galen and Aetius considered its therapeutic value as very unreliable. Lusitanus cites accidents attributed to its uses, but, on the other hand, Celsus and Pliny are loud in its praise.

Be that as it may, in the Middle Ages we find the milk diet, now in favour, then discredited. Amongst its adversaries may be mentioned Guyol and Porro-Forestus, while it found ardent partisans in Wepfer and Cœtus. In the 18th century milk had regained its former favour, and since then it has occupied the front rank in most affections.

The different causes of albuminuria are too numerous to mention, and it seems somewhat illusory to employ constantly the same treatment; the uniform prescription of milk, says M. Liguret, is scarcely compatible with sound judgment, for there exist in reality cases of nephritis for which this regime should be recommended, and others where it should not be prescribed.

Acute nephritis should be treated by the absolute milk diet, especially where the urine is a dirty brown, rose or sanguinolent, where albumin is abundant and if there be œdema.

Aided by ordinary therapeutic resources, rest, local or general blood letting, milk procures, generally, in such cases, the best effects. But, says Rondol, in order to derive the best results from the treatment, it should be given with method. First of all, the milk should be given in fractional doses of five or six ounces every two hours. By proceeding thus the vascular tension will be reduced to a minimum, while no accident in the capillaries of the kidneys will be observed. The milk should be taken slowly, and not more than a quart and a half should be prescribed in the twenty-four hours.

Many persons accept with difficulty the lactic regime, and to surmount the repugnance, a small quantity of rum, brandy, tea, coffee, etc., might be added to the milk. In case of gastric disorders, vichy water might be prescribed, or lime water in case of diarrhea. The mouth should be always rinsed after each dose of milk.

¹F. Moritz, M. D., Münchener, Med. Woch., July 28, 1908.

¹Med. Press and Circular, July 22, 1908.

As to how long the milk regime should be continued authors are not agreed. Some prescribe it only for a few days, others propose, on the contrary, to give it until the albumin has completely disappeared. According to M. Liguret, it is better to return to the ordinary regime as soon as possible, otherwise general debility would result; the food should at least be prepared without salt. MM. Salamon and Brault consider that the exclusive milk diet should not be prolonged beyond one month.

In interstitial nephritis, if premonitory signs of uræmia are observed, milk diet should be considered imperative in order to give rest to the renal organs, and once this danger is averted the mixed diet should be resumed, into which, however, milk enters in a large part.

In the large white kidney or granular small kidney developing in the course of chronic nephritis, the lactic regime is dangerous. The same may be said of the albuminuria observed in chlorosis, diabetes, tuberculosis, syphilis.

Sugar.¹— Sugar is often given a bad name from a physiological standpoint, says *The Lancet*, but in many instances it is questionable whether it is deserved. It seems inconceivable that the bountifulness with which the world is supplied with sugar should mean anything else than that it is designed for human food. Sugar is one of the most powerful foods which we possess, as it is the cheapest, or, at any rate, one of the cheapest. In muscular labor no food appears to be able to give the same powers of endurance as sugar; and comparative practical experiments have shown without the least doubt that the hard physical worker, the athlete, or the soldier on the march is much more equal so the physical strain placed upon him when he has had included in his diet a liberal allowance of sugar than when sugar is denied to him. Trophies, prizes, and cups have undoubtedly been won on a diet in which sugar was intentionally a notable constituent. It has even been said that sugar may decide a battle and that jam after all is something more than a mere sweetmeat to the soldier. The fact that sugar is

a powerful "muscle food" accounts probably for the disfavor into which it falls, for a comparatively small quantity amounts to an excess, and excess is always inimical to the easy working of the digestive processes. A strong solution of sugar is irritating to the tissues, will set up superficial inflammation, and may produce a form of eczema. It is well known that an excessive diet of sugar irritates the mucous membrane of the stomach and encourages the production of mucus and of a highly acid gastric juice. The ingestion of much sugar spoils the appetite. Children who have been tempted to overindulge in "lollipops" between regular eating times do not want their ordinary meal. The schoolboy spoils his dinner by eating too many sweet things before that meal. An overindulgence in sweet liquid, in sweet ices, and in "crystallized" fruit after dinner retards the digestion of the meal. Sugar satiates; it is a concentrated food. Where sugar does harm therefore, it is invariably due to excess. Taken in small quantities and distributed over the daily food intakes sugar contributes most usefully in health to the supply of energy required by the body. In certain diseases, of course, the presence of sugar in the diet is plainly undesirable. Generally speaking, however, there is a prejudice against sugar which is not justified by physiological reasoning—at all events, when it is eaten in moderation; and it is a curious fact that the man who practically abstains from sugar, or reduces his diet to one almost free from carbohydrates in favor of protein foods such as meat, often shows feeble muscular energy and an indifferent capacity for physical endurance.

ULCER OF LEG.—When a patient suffering from varicose ulcer of the leg will not consent to curetting and the Schede operation, the following ointment may be ordered, with fair chance of benefit: Ungt. ferri oxidi hydrati, ungt. styracis, olei olivæ, aa., partes æquales.

This ointment is to be applied on gauze, once daily; better on silk.—*American Journal of Clinical Medicine.*

¹Editorial, *The Lancet*, London, June 27, 1908.

MISCELLANEOUS TOPICS.

A Square Deal!— There is something tensely earnest in such a demand, for back of it stands the courage of convictions and a fundamental belief in the inalienable rights of mankind. Life is a game, so is business. Some play well, some play poorly. Luck, the elusive Goddess that makes our day dreams real, or leaves us forlorn and broken, is a fickle lass and while friendly to-day, may be as cold as ice to-morrow. When the "deal is square," however, strong men never complain. As the Persians say, "he who would taste the real joys of winning, must first suffer losses." Therefore it all resolves itself down to the elemental law of averages. But when the deal is "rough," even such humble and down-trodden individuals as cabinet officials have been known to exclaim,—if not to protest.

All this has been suggested by the perusal of a pamphlet sent out by Dr. Wallace C. Abbott of Chicago, editor of the *American Journal of Clinical Medicine*, and a physician who has had the ability and good fortune to develop a well known pharmaceutical firm that thousands of American physicians have been glad to patronize. The pamphlet in question is strong and dignified and one that certainly ought to be carefully read by every fair-minded American doctor. It states Dr. Abbott's side of an unfortunate controversy, succinctly and without the slightest vituperation, features which are most commendable. After reading this pamphlet, one will wonder why it should be necessary for Dr. Abbott to go to such expense to reply to his critics. He is a member of the American Medical Association in good standing, and it would seem that the very least to which he, in common with all other members of the Association is entitled, is the publication in the *Journal* of a complete and ungarbled response to any and every charge made against him. The medical profession is made up of too many broadminded men, too strongly imbued with the American spirit of fair play to condemn any man without giving him every opportunity to present his defence. Failure to be thus

fair, when the honor and reputation, to say nothing of the fortune of a man, are at stake, suggests motives that if not sinister and malicious, are certainly open to grave criticism from the standpoint of ethics. The American Medical Association is too splendid an institution and the *Journal*, as the logical exponent of all that is noble and honorable in medicine, ranks too high to be subjected in any way to the uses of personal animosity or the inevitable dangers of bias.

Dr. Abbott, with a confidence in his position that commands respectful attention, only asks for "a square deal." We think we know enough of the character of the great majority of American physicians in the year of Our Lord 1908 to assure him that he will get it. The publication he edits, the *American Journal of Clinical Medicine*, is doing a splendid work along constructive lines and numbers among its contributors and readers, the very men whom the great American public fortunately depend upon for medical advice and treatment. Such men want every case tried on its merits, for *magna est veritas, et prevalebit!*

The Responsibility of the Reading Public.— While it is true that every publication owes to its readers the most careful scrutiny of its editorial opinions before spreading them broadcast, it is equally true that the reading public is not without responsibility. The power of the press is no idle boast though it is too often a power based on false values. The policies and opinions of a publication that are looked upon as having the composite force of many minds are almost invariably the creation of one mentality and one personality. The fallibility of every man, however capable and honest, emphasizes the error of accepting editorial utterances on any other basis than the personal one. If these utterances are sound and harmonize with a reader's opinions, it is right to accept them, but if they are radically opposed to one's personal knowledge and beliefs, it is woefully wrong to permit them to set us adrift. The duty of the reading public, then, is to exercise due discrimination in the process

of digesting editorial expressions, however attractively served, and by such discrimination, to absorb and utilize only such portions as will strengthen and not weaken the individual.

The Doctor's Charge.—"The average man will give a lawyer \$300 to \$500, together with a lifetime's praise, to keep him out of the penitentiary for from two to ten years, and at the same time he will raise a phosphorescent glow and a kick that can be heard around the world if a doctor charges him \$50 to \$100 to keep him out of hell for a lifetime. We are the only people under God's ethereal tent today who keep open shop 24 hours each day and 365 days in each year. We are also the only laborers to keep on working for people who do not pay. I can carry my part of charity with as good a grace as most men. I can go through rain, snow or mud and do my best, provided the case is one of worthy need, but to reward continually downright rascality, willful drunkenness and wanton laziness is getting out of my line." *Dildy, Texas State Journal of Medicine.*

The Breeding of Flies.¹—In a summary report by Dr. Hamer, of the London County Council, on the fly nuisance, according to his investigation, he concludes that the most productive of all factors in the fly genesis are accumulations of horse manure; but all collections of dust and other refuse act as breeding grounds, though less actively, and promote fly nuisance in their neighborhood. He observed that such refuse placed over two hundred yards away from dwellings, distinctly influences the number of flies that may haunt the houses.

His investigations also clearly and scientifically corroborated the common belief that children, dirty walls and ceilings, particles of food on the floor and in the sinks, are particularly congenial to flies and influences them to haunt such places.

His method of investigation consisted in selecting stations in the neighborhood of twelve premises such as cowhouses, stables, manure, depots, a jam factory, a knacker's yard, and a place where catgut was manufactured. Ordinary dwelling houses inhabited by working people, two fifty yards and two two hundred yards away, were selected

as stations. In these houses squares of paper smeared with honey gum were suspended at a definite height, collected at definite intervals, and calculations made of the number of flies caught.

This report again emphasizes the fact that the house-fly lives its larval life almost exclusively in animal dejecta, especially in horse manure, and in its complete larval form carries disease germs in a passive way.

Laboratory experiments have clearly demonstrated that the house-fly is capable of disseminating the germs of zymotic diarrhoea, typhoid fever, tuberculosis, Asiatic cholera, etc. A fly contaminated with the germs of any of the above-named diseases may carry the infection for a considerable distance and remain infectious for a comparatively long time. It has been shown that flies may carry the typhoid bacillus in a living condition for over two weeks. Experiments have proven that the typhoid bacillus may pass through the intestinal tract of a fly and remain alive; hence the danger of the fly spot. The tubercle bacillus is another germ that has been found alive in the intestinal tract of the house-fly. The flies become infected by eating the sputum of tubercular patients.

Flies are not as dangerous to disseminate disease by carrying the germs alive in their bodies as they are dangerous by carrying the germs in their hairy feet, which are particularly adapted for picking up germs and thus conveying them to the food of healthy persons. They settle on the dejecta of patients, crawling over the patient or the soiled linen, and thus pick up the germs and become a potent medium in disseminating, especially the diseases previously mentioned.

The moral to be learned from this lesson is that flies are a source of great danger to the welfare of healthy individuals; that they should be kept away entirely from foodstuffs, and all possible breeding places for them should be avoided near dwellings. In fact, the value of flies is nil, except for their ability to pester man and beast.

Mouth-breathing is sometimes a mere habit, where obstruction does not exist. Urge such patients to exercise their will power by practicing nasal respiration on arising and retiring. Snoring is also frequently overcome by following this simple suggestion.

¹ Editorial, *Monthly Encyclopedia*, June, p. 312.

NOTES ON MODERN PHARMACEUTICAL REMEDIES.

Pharmaceutical manufacturers must realize that a vast change has taken place in professional ideas concerning pharmaceutical products. Secrecy in regard to active ingredients, vagueness or exaggeration in respect to therapeutic action, and offensive methods of exploitation are features which cannot fail to prove fatal obstacles in obtaining professional patronage. Yet there never was a time when medical men were readier to accept and use reputable products than now. Non-secrecy in regard to active constituents, truthfulness, conservatism, and square dealing with those whose patronage and support are solicited, are fundamentally essential. Firms who will conform to these, to say the least, legitimate demands of the medical profession, and who will co-operate intelligently for the elevation of pharmacy and therapeutics, may count on a most gratifying confidence in their products, and the maintenance of relations mutually beneficial. But firms who refuse to "tote fair," and who see in the medical man nothing but a dupe and a convenient aid to lay exploitation are bound to fail ignominiously.

This Department has attracted a good deal of attention. Its purpose is two-fold,—to furnish the readers of AMERICAN MEDICINE with reliable information concerning modern remedies and to give worthy products the recognition which they deserve. Some firms who have not understood the objects of the work undertaken have sought to buy representation in this list. It goes without saying that all propositions of this character have been curtly turned down, and they never will receive any other treatment. A great many products are under careful consideration and investigation, clinical as well as chemical, and as rapidly as possible warranted descriptions will be published. The plan under way aims to co-operate to the fullest extent along legitimate lines, with those firms who respect the rights and needs of the profession, and take just pride in their own honesty and reliability.

The other kind—fortunately few by comparison—need expect nothing but condemnation.

Let no one, therefore, make the mistake of seeing in this Department any other motive than the dissemination of proper information and the establishment of a better *entente* between an earnest profession and a useful industry.

(Continued.)

PROBILIN.

Description—Probilin is supplied in the form of small non-coated pills, of shining black color, and with a decided mentholic odor and taste.

Formula— Each pill represents

Acid Salicylic	0.02
Natr. Olein	0.08
Natr. Stear.	0.04
Phenolphthalein	0.01
Menthol	0.03
Excipient	q. s.

Action— It is claimed that probilin tends to arrest bacterial invasion of the gall-bladder, by producing both biliary and duodenal antiseptics and a free flow of thin bile. It is soothing to the mucous membrane of the upper intestine and thus favors reduction of mucosal swelling, and relaxation of spasmodically contracted ducts. It is also claimed to be able to soften cholesterin and by hastening its elimination prevent the concretion of this the predominating constituent of gall stones.

Indications—Probilin is recommended in gall-stone disease, cholangitis, cholecystitis and as a valuable means of gall-stone prophylaxis after operations on the gall bladder.

Dose and Administration— Usually 3 or 4 pills twice daily on rising and at bed-time, followed by liberal draughts of hot water, or milk, for about 30 days; then two or three pills once daily for a similar period. Probilin can be used over long periods with no harm and what is usually very material benefit.

Special Considerations—The formula, high quality of ingredients and demonstrable clinical effect.

References—Bauermeister, *Therap. Monatsh.*, May, 1904 and March, 1906; Brings, *Medic. Blätter*, Nos. 25-6, 1906; Cohnheim, *Diseases of the Digestive Tract*, 1908; Hutchinson, *Ther. Record*, Jan., 1908; Kuehner, *Medico*, June 19th and 26th, 1907; Newsom, *Ther. Record*, April, 1908; Scherer, *Med. & Surg. Mon.*, May, 1905; Thum, *Med. Progress*, February, 1907; Wilcox, *Treatment of Disease*, 1907; Schürmayer, *Wien. kl. Rundschau*, Nos. 15-33, 1908; Rockhill, *Woman's Med. Journal*, April, 1908.

American Agents—Schering & Glatz, New York.

AKARALGIA.

Description—A granular effervescent compound.

Formula—Each dram represents

Sodium Sulphate	1 gm.
Sodium Salicylate	0.3 gm.
Magnesium Sulphate	1.55 gm.
Lithium Benzoate	.15 gm.
Tinct. Nuc. Vom.	0.2 cc.

Action—Eliminant and anti-rheumatic.

Indications—Recommended in acute and chronic rheumatism and gout, all manifestations of the so-called uric acid diathesis and wherever increased elimination is necessary or desirable.

Akaralgia has been successfully used in neuralgia and the myalgias.

Dose—Two drams in a liberal quantity (at least one half a glass) of water, one-half hour before meals; in acute cases one dose every two or three hours until relief is obtained.

Special Considerations—The special formula, the care and skill in manufacturing, and the quality of the ingredients.

References—b. K. Rachford, M. D., of Cincinnati, originated this combination and prescribed it in the form of a carbonated water and brought it to the notice of the medical profession in a paper on the Treatment of Migraine, read by him before The Association of American Physicians in Washington in 1903. Formulated as an effervescent granular salt by The Wm. S. Merrell Chemical Company.

Manufacturers—The Wm. S. Merrell Chemical Company, Cincinnati, Ohio.

TANPHENYFORM.

Description—Tanphenyform is a powder.

Formula—Tanphenyform contains tannin albuminate 63.9%, hexamethylenamine 8.3%, salol 27.8%.

Action—An intestinal astringent and antiseptic. It is claimed for Tanphenyform that it liberates tannic acid, phenol and formaldehyde in the intestinal canal, and does not exert any irritating action in the stomach, nor interfere with the digestive processes.

Uses—Tanphenyform is recommended for all forms of diarrhea, especially that attending typhoid fever. Also whenever an intestinal astringent and antiseptic is required.

Dose—5 to 20 grains every 3 or 4 hours as indicated.

Special Considerations—Freedom from irritating action.

Bibliography—Tanphenyform has been approved by the Council on Pharmacy and Chemistry of the American Medical Association and a description appears in "New and Non-Official Remedies."

Manufacturers—Wm. R. Warner & Co., Philadelphia, Pa.

NEWS ITEMS.

Officers of the American Public Health Association.—At the annual meeting of this organization, which was held in Winnipeg, Canada, during the week of August 24th, the following officers were elected for the ensuing year: President, Dr. Gardner T. Swarts, of Providence, R. I.; first vice-president, Dr. R. M. Simpson, of Winnipeg; second vice-president, Dr. Jesus Chlco, of Mexico; third vice-president, Major Charles F. Mason, of the Medical Corps of the United States Army; secretary, Dr. Charles O. Probst, of Columbus, Ohio; and treasurer, Dr. Frank W. Wright, of New Haven, Conn. The association will meet next year in Richmond, Va.

The International Congress on Tuberculosis, which meets in Washington from September 21st to October 12th, will mark an epoch in the anti-tuberculosis movement in this country. This Congress meets triennially and has never been held in the United States before,

and it is not probable that it will convene again in this country for many years. The section meetings will take place during the week beginning September 28th but the exhibitions will be open during the entire time. Clinics and demonstrations will be held in connection with the exhibition, and a series of public lectures has been arranged to be given in Washington, Baltimore, Philadelphia, New York and Boston. The most eminent authorities on the tuberculosis problem in our land and from other countries will take part in the discussions. Official delegates will be present from nearly all the civilized countries.

The transactions of this Congress will be published in four large volumes. These are free to all members of the Congress who have paid their membership fee or \$5.00. The price of the transactions will be doubled after the Congress adjourns. The exhibition and section meetings will be housed in the new National Museum, adjoining the Smithsonian Buildings. The use of this building was authorized by a special act of Congress.

Active membership in this Congress may be obtained by addressing the Secretary-General, 714 Colorado Building, Washington, D. C., and paying a fee of \$5.00. Besides the privileges of membership, active members receive the full set of published transactions without extra charge.

The Scientific Exhibit of H. K. Mulford & Co. at the recent annual meeting of the A. M. A., at Chicago, illustrating various curative sera, vaccines, etc., is now part of the permanent museum being developed in connection with their scientific department and school of instruction.

The Prohibition of the Use of Opium in the Philippine Islands became absolute, except for medical purposes, March 1, 1908. This caused an enormous increase in the number of opium habitues desiring hospital treatment and the Government was compelled to use some of the wards of the new Insane Department at San Lazaro Hospital, for their accommodation. In all, 307 patients were admitted, and of this number 260 have been discharged as cured. The majority seemed to be really desirous of being rid of their affliction, and every facility is being given them to that effect.

As pointed out by Dr. Randolph Winslow, the Fowler position may prove objectionable after some intra-abdominal operations by increasing the chances of adhesions and intestinal obstruction from too great a descent of the intestine into the pelvic cavity.

BOOKS RECEIVED.

Quain's Anatomy, Vol. 1, Embryology.—By Thomas Hastie Bryce, M. A., M. D., Lecturer in Anatomy, Univ. of Glasgow. Published by Longmans, Green & Co., London, Eng., 1908.

International Clinics.—A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and other topics of interest to Students and Practitioners. Edited by W. T. Longscope, M. D., Philadelphia. Vol. II, 18th Series, 1908. Published by J. B. Lippincott Co., Philadelphia.

Consumption.—Its Prevention and Cure without Medicine. With chapters on Sanitation and prevention of other diseases. By Chas. H. S. Davis, M. D., Ph. D. Second edition enlarged. Published by E. B. Treat & Co., 241 W. 23rd St., New York.

Treatment of Gonorrhoea in the Male.—By Charles Leedham-Green, M. B. F. R. C. S. Second edition. Published by Wm. Wood & Co., 51 Fifth Ave., New York. Price \$2.00 net.

Tuberculosis, as a Disease of the Masses and How to Combat It.—Fifth edition revised and illustrated. Prize essay by S. Adolphus Knopf, M. D., New York. Published by Fred P. Flori, 16 W. 95th St., New York.

Aids to Osteology.—By Philip Turner, B. Sc., M. B., M. S. (Lond.) F. R. C. S. Published by William Wood & Co., New York. Price, \$1.25 net.

Text Book of Human Physiology.—By Albert P. Brubaker, A. M., M. D. Third edition revised and enlarged. Published by P. Blakiston's Son & Co., Philadelphia, Pa., 1908. Price, \$3.00 net.

Students' Handbook of Gynecology.—By Geo. E. Herman, M. B. (London). With 170 illustrations. Published by William Wood & Co., New York. Price, \$2.50 net.

Borderland Studies.—By George M. Gould, M. D. Volume Two. Published by P. Blakiston's Son & Co., Philadelphia, Pa.

American Medicine

FRANK CLARK LEWIS, M. D., *Managing Editor.*

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The International Tuberculosis Congress just held in Washington was most successful. As a convincing demonstration of the world's interest in the tuberculosis problem, this great convention of earnest scientific students was conclusive and furnished a most eloquent promise for the future. The attendance was remarkable and the registration—over 7,000—was much larger than expected. The work of the various sections was of great practical interest and the general sessions were noteworthy, not alone for the prominence of the men who took part in them, but for the splendid optimistic tone that was the keynote throughout. The general management of the Congress was excellent and too much credit cannot be given to Dr. John S. Fulton, the Secretary-General. Some complaint was heard at the unfinished, and in some instances, uncouth condition of some of the halls and rooms. It was indeed unfortunate that the new Museum building was not nearer completion, but it can be truthfully said that this condition in no way diminished the success of the whole event. That Dr. Fulton and his associates did so well under adverse circumstances testified to executive ability of the highest order.

One of the registration clerks regretfully stated that the bulk of the criticisms had been expressed by American members of

the Congress. Once again, therefore, was shown the unfortunate American habit of finding fault at the slightest provocation. In certain respects there may have been room for improvement, but there were so many things to commend and so much to admire in the administration of the whole Congress that the fault-finders are to be pitied for their narrow vision.

The Exhibit was probably the most notable exposition of sanitary progress this or any other country has ever seen. It is too bad that more people, and especially more medical men could not have viewed this great hygienic object lesson. In no way could philanthropy accomplish more in helping to stamp out tuberculosis than to make possible the study of this exhibit by the greatest possible number of American citizens. It is exceedingly gratifying that the efforts of Dr. Alfred Meyer to bring the exhibit to New York City have finally proven successful.

The interchangeability of bovine and human tuberculosis, as was expected, gave rise to the most extensive discussion, and the strenuous efforts of certain members to force Koch to renounce his views bade fair to amount almost to a scandal. But wiser and calmer heads prevailed and Koch was neither annihilated nor subjected

in any way to the treatment that some of his opponents would willingly have meted out to him. And after the smoke of linguistic battle had cleared away, no honest broad minded man could fail to admire this strong German scholar who fought so well for his beliefs. Seven long years ago Robert Koch startled the scientific world with his views on bovine and human tuberculosis, arrived at after painstaking research. From the very first he encountered the most violent opposition, and Lord Lister at the same meeting and on the same platform from which Koch delivered his famous address, took issue with him at once. But the fact that seven years afterwards, such a controversy as that which took place at Washington could possibly occur, points either to the strength of Dr. Koch's contention, or the lamentable weakness or neglect of his opponents. The great majority of scientific students of tuberculosis firmly believe that bovine and human types of the disease are interchangeable, and there are good grounds for this opinion. But history is studded with beliefs, apparently well founded, that have been proven fallacious, and it is neither immoral nor criminal to question any opinion, however settled or established it may seem to be. Experience is constantly showing that the last word has not been said on any subject, and the certainties of yesterday have the embarrassing habit of turning up as the uncertainties of to-day. Consequently when Koch raised the question of the relation of bovine tuberculosis to the human family, it was for those who believed his views to be wrong to prove them so. Until they do, however, they have no right to call him obstinate, stubborn or stupid.

The question of the transmissibility of bovine tuberculosis to human beings in the meantime, remains in *statu quo*. Not even Dr. Koch has suggested the slightest relaxation in any protective measure, and every instinct of cleanliness, esthetic as well as dietetic, urges the most stringent enforcement of pure food laws in this direction. Koch has raised an academic question, one that calls for calm, considerate discussion and systematic research. Several of our American scientists have recognized the same problem and Theobald Smith antedated Koch in more than one of his premises. But it should be remembered that there is no harmony in science and divergent opinions are the only sure means of arriving at ultimate truths. Differ as we may, therefore, with Dr. Koch, wrong as we may believe him to be, we must nevertheless esteem him for his convictions and the steadfast courage which has led him to defend them. Would that scientific medicine had more workers of the same conservative, capable and courageous type!

Koch's premises, as a matter of fact, do not in any way change the situation as regards modern precautions against infected milk or meat. It is not the probability but the possibility of infection from bovine sources that warrants the protective measures that have been evolved. Granting that only a small number of cases of tuberculosis are bovine in origin—four or five out of each hundred—who wants to be one of them? Certainly there is no way of knowing whether one is immune against the bovine type of bacilli, or not, and there is always the possibility of being unusually susceptible. There is, moreover abundant reason for believing that

young children are more susceptible than adults to the bovine type but if only one per cent perish the danger is established. Therefore since sanitary prophylaxis is concerned much more with the quality than with the quantity of an infection danger, any faltering in the vigilance of food inspection and restriction against bovine tuberculosis would be criminal. We cannot afford to relax a single detail in our line of defence against this insidious foe of mankind, for vulnerability at any point, however slight, spells constant menace.

Religion and Medicine have always been twin servants of man and formerly all physicians were priests, but that was when spiritual causes were supposed to exist in every case of sickness. The studies of the early physicians revealed so many physical causes of malfunction that there was a natural split between the two professions and the separation culminated in those remarkable denials of the existence of the spiritual when the Nineteenth Century wave of materialism swept over the scientific world. The pendulum has begun its return swing, and in every part of the world there are reports of a disposition to class certain nervous diseases in the realm of the spiritual, though it does seem that the only reason for the movement is the fact that we have not yet discovered the material causes. The new movement then though doing some good is liable to do harm and it certainly behooves the medical profession to go slow and warn against extremism. About two years ago a clergyman very foolishly proclaimed possession of an unused divine power to cure all diseases, and that all ordained priests had received the same power from Christ through apostolic succession. AMERICAN MEDICINE commented upon this ab-

surdity at the time and the remarks were unfortunately taken to be a condemnation of the more rational movement inaugurated by the Rev. Dr. Elwood Worcester of Emmanuel Church in Boston.

The latest church medical movement differs from all past ones in that physicians are associated with it to make the diagnoses and treat patients needing medical or surgical care. The only cases accepted for psychic or spiritual treatment are those which are declared to be purely "functional" neuroses and psychoses. Herein lies the danger and also an assumption which may be wrong. The list of functional diseases, once quite large, is always diminishing, for we are constantly finding organic changes formerly overlooked. Sometimes the symptoms are reflected to a healthy organ, and even "habits" remaining after the cause is removed, may depend upon nerve changes which will be discovered in the future. It is not conceivable that a perfect organism works imperfectly under normal stimuli. Hence neurasthenia and psychasthenia are now generally recognized as due to abnormalities in the protoplasm of the nerve cells, often congenital though sometimes a mere matter of excessive expenditure or defective nutrition, or both. Hypotheses are like balloons, and if not anchored to the solid material of disease, they drift away.

The cure of neurasthenia and the relief of its symptoms are two vastly different matters. These cases constitute the great majority of the "cures" of Christian Science, though many, being congenital defectives, are wholly incurable. There has been a relief of symptoms or even a transfer to some other form, and though life

has temporarily been made much more worth living, the question is being asked as to whether the ultimate results of the stimulating psychic treatment will not make the last state worse than the first and whether some of those who need rest and food are not made worse. It is claimed that the spiritual treatment is soothing, but there is nothing to equal the tremendous mental stimulus of seeking aid from what has such a mystic atmosphere. Yet it is quite possible that such shocks, as in hysteria, serve to start a new functioning which in its turn leads to better nutrition and restores health.

The longevity of neurasthenics is well known, and it is often said that the disease prolongs life, though by that is meant that the miserable sufferers, being unable to exert themselves, give up the fight, lessen the strains and avoid the myriad adversities which carry off the more robust. In war time the weaklings live longest because only soldiers are liable to bullet wounds. Both Christian Science and the Emmanuel movement deal with a very small percentage of invalids and these would live long anyway. For such reasons, the results of the Emmanuel clinic are being keenly studied with the forlorn hope that Worcester has found a means of bringing permanent relief to a large number of cases which generally wander from doctor to doctor through a long complaining life.

The danger of a little knowledge is the fault of Worcester's book "Religion and Medicine," for it contains errors of fact and inference, is interlarded with baseless assumptions, refers to theories discarded 30 to 50 years ago, and mixes the spiritual element with purely material matters. His

former work on the Book of Genesis was so safe and sane that it was hoped he would apply his great mental power to the New Testament stories of miraculous healing, but the only outcome is an attempt to fit modern diagnoses to cases which physicians cannot even recognize as having existed. There is a curious parallel between the alleged cures at Lourdes or in a Christian Science Church, with those in the Mediterranean basin, recorded some 50 to 80 years after the events, from the traditions of illiterate credulous peasants. It is also amazing that one should reject the idea of demoniac possession and accept the rest. The only thing to do with these stories of cures, is to treat them in the same reverent way Worcester has treated the stories of Genesis, though to be sure there is a growing body of biblical students convinced of the historical truth of the fact that cures of something did take place.

The subconscious mind is a modern conception of psychologists which is mystifying rather than clarifying. It gives the impression that a distinct mental entity exists in addition to the conscious mind. In one sense of the word, the mind is the sum total of the functions of the whole nervous system and if parts are temporarily at rest, as in sleep, abstraction or hypnosis, it is not evidence that the balance is another mind. The brain is capable of perceiving and recording impressions without our being conscious of them, and that too is not evidence of the existence of a subconscious personality. After assuming this entity, it is a double assumption that hysteria and other psychoses are its diseases. These modern conceptions are like the old metaphysics, of little practical use. The results of sug-

gestion can be explained without them. With all its faults, there is no doubt that good is being accomplished in popularizing some of the more recent views as to hypnosis and suggestion. In addition there is sound advice which tends to break up the self-centered thoughts which are the bane of all neurotic conditions. There is no question that prayer in proper cases is of extreme value in relieving nervous tension and emotional excitement, which are preventing recovery. Sensible physicians welcome the aid of priests. On the whole, then, the new movement is to be commended and it is hoped that other forceful clergymen will take it up, to the end that Christian Science with its absurdities and dangers will be destroyed.

Spiritualism is the extreme form of the new reaction against materialism. A number of scientists, including some physicians are convinced of the reality of the phenomena of spiritualistic "mediums." Fraud has entered so largely into the wretched business that it is difficult to take the matter seriously. Nevertheless it is unwise to reject the opinions of great men who have been guided by cold facts. At least the matter can now be investigated without fear of ridicule and it might be possible to correlate the facts with other nervous phenomena. There is now an effort to explain them by known psychic laws, thereby utterly destroying the idea of the presence of spirits. That is, the new spiritualism, though a reaction from materialism seems destined to end in a new materialism more marked than ever. Psychic research may therefore be of some value to neurology and psychiatry and deserves encouragement even if the present hypotheses are too *bizarre* to be accepted.

The explosion of the theory of heredity is the unfortunate title of an excellent paper by Dr. A. L. Smith of Montreal, (*N. Y. Medical Journal*, Sept. 19, 1908), for he does not deny that there is such a thing as heredity, but shows that it is not responsible for the transmission of disease. There was a time when we all believed in the inheritance of tuberculosis, for we saw so many instances in which it afflicted several generations in certain families. The discovery of the bacillus shattered this belief but it is so difficult to abandon old ideas, that we continued for years to preach the theory that a predisposition was inherited, and many physicians think so even yet, though the discovery of the causes of immunity and susceptibility has raised a strong opinion that offspring of the tuberculous may be more resistant than others. Dr. Smith devotes most of his paper to the proofs that cancer is not hereditary and the increasing number of facts which indicate that it is an infection at first strictly localized. In his remarks as to the non-heredity of insanity and alcoholism, he is voicing a small but increasing body of professional opinion.

Incorrect use of the word heredity is still so common that it is time to end it once for all. If a child is poisoned a few days after birth no one thinks of the resulting condition as hereditary, yet if the damage is done shortly before birth, it is a very common error to describe it as an inheritance. To be sure, in a certain sense we inherit everything our parents choose to give us, whether it is money earned after we were born, or an unstable nervous system due to their alcoholism, but the term heredity is biologic and technical, referring merely to the transmission of normal char-

acters and it must not be used in the loose popular sense of the transmission of acquirements.

Heredity never originates abnormalities.

Degenerate families have normal ancestors, to whom something has happened before or after conception to injure the offspring. It is the opposite of heredity. This is illustrated by some investigations of the gynecologist Pinard of twenty-three families in each of which there was one degenerate, infirm or idiot child, though sound and vigorous children had been born before or after in each case. In twenty-two of the instances, the cause was found in some disease of one or both parents at or a short time before conception; typhoid, influenza, icterus, gout or rheumatism. That is, the ovum was poisoned by the toxins and could not develop normally. Heredity was interfered with, and the result is no more an inheritance than poverty resulting from embezzlement by a wicked trustee.

Heredity keeps offspring true to ancestral type and the environment causes departures from type. Hence if adverse factors are removed defective development is prevented, but if they persist, their results reappear generation after generation as though they were hereditary. Indeed, a child must necessarily be more injured by the things which have injured its parents, such as improper food, housing or habits of living. Removal to a normal life in a normal environment is followed by normal development. In seafaring families it frequently happens that a son is drowned years after the father, but that does not constitute heredity. If such families take up land occupations, drowning disappears.

Nevertheless it is more or less difficult to believe that diseases are in the same class, because the causes have been unknown. It does seem therefore that the onslaughts now being made on the old theory of the heredity of disease should become popularized so as to rivet lay attention on the removable causes. The outlook for improved public health would then be optimistic in the extreme. Give the slum children a chance, and even they will develop like normal remote ancestors in spite of defects of their parents. It is the slum which interferes with true heredity. If such defects were hereditary there would be a sad outlook for the future race, for every parent has some abnormality which would be perpetuated.

The Broader Usefulness of Medical Men.—There is no denying the fact that the medical profession can accomplish any worthy purpose it sets out to achieve. One has only to consider the many measures pertaining to public health and hygiene that have been passed in every state during the last decade, to appreciate the fundamental truth of this statement. The intelligent public at last realize that medical men, in spite of their "peculiarities," are a beneficent force in every community. Their collective efforts in legislative matters have ever been for the betterment of mankind, and the civilized world has no better example of real altruism than the voluntary public work of the medical profession. During the next few years, a great many questions pertaining to public health are bound to be foremost among those our legislators will be called upon to consider. Medical men of education and executive ability must necessarily play an important part, not only in the evolution of sanitary and

food laws, but in their enforcement as well. No graver or more important duty, therefore, confronts the physicians of the United States than to fit themselves for the great constructive epoch at hand, and to individually and collectively use the power they undeniably possess as a result of their education and opportunities.

In every other civilized country of the globe medical men are liberally represented in the highest branches of government, and there is a general recognition of their peculiar fitness for legislative and administrative service. That doctors have not been equally honored in this country has been due entirely to their reticence and an unfortunate general sentiment that medical men should hold aloof from politics. As the poet has written, however:

"New occasions teach new duties,
Time makes ancient good uncouth."

and the broadening of professional opinion and opportunity has made it apparent that physicians more than almost any other class have well defined and urgent civic duties. No one thing, therefore, promises greater and more widespread gain to the American people, than the fact that from one end of the country to the other, leading physicians are actively entering the political arena. In not a single instance has it been necessary to sacrifice the professional status in the slightest, while in nearly every respect the public benefits have become as gratifying as they have been pronounced.

The Opportunity of the Ohio Profession.—In Ohio at the present time there is a campaign under way which concerns not only that state, but the whole country at large. Reference is here made to the candidacy of Dr. C. A. L. Reed of Cincinnati

for the U. S. Senatorship to succeed Senator Foraker. Few medical men are better known than "Cal" Reed. To thousands of physicians he is a warm friend, and a most lovable colleague. He was born on the 9th of July, 1856, and is consequently in the prime of life. His preliminary education was obtained at public and private schools and the degree of A. M. was conferred upon him by Miami University. His medical education was obtained in Cincinnati, 1874 being the date of his graduation—and he has pursued extensive courses of post-graduate study in London and Paris. For a good many years Dr. Reed has practiced in Cincinnati, during which time he has been one of the foremost medical men of the country. He has a charming family consisting of his wife, and two children—a son and daughter.

Dr. Reed has made many valuable contributions to medical literature and his textbook on gynecology enjoys a well deserved popularity. In 1892 he was President of the Mississippi Valley Medical Association, and in 1901 was likewise honored by the American Medical Association. He is also a member of many other scientific bodies and only recently was made a Chevalier of the Legion of Honor.

At the present time Dr. Reed is chairman of the Legislative Council of the A. M. A., and is doing a splendid work in this capacity. Without doubt he had more to do in bringing about the passage of our present National Pure Food and Drug Law than any other one man.

In every way Dr. Reed is well equipped for the great office to which he aspires. Quick, keen and able, he is possessed of a charming personality that is admirably balanced by the highest sense of honor and principle. A fluent speaker, a deep

thinker, above all he is an optimist. A glutton for work, he is indefatigable for any cause that elicits his sympathy or interest. No man before the people to-day better exemplifies senatorial ideals than Dr. Reed, and it is certain that his election will mean much, not only to his state, but to the whole country.

Dr. Reed has been unfortunately handicapped by the attitude of the Ohio newspapers, the result according to current rumor of the pernicious influences exercised by certain interests opposed to the Pure Food and Drug Law. Naturally those interests are actively antagonistic to Dr. Reed. But to revert to the sentiments expressed in the beginning of this article, the medical profession of Ohio hold it in their power to accomplish the election of Dr. Reed. Here is the chance, then, to do a splendid work for a worthy purpose, and incidentally to demonstrate to the citizens of the United States, the broader usefulness of medical men.

Intolerance, once again, arises to shame the medical profession. Dr. LeGrand Denslow, a New York physician who has been directing his studies to locomotor ataxia, recently gave a report of his investigations to his colleagues. With admirable professional spirit his work and the results he has obtained were submitted to the profession at the Academy of Medicine. Several of the better class of newspapers following a growing custom that is being fostered in the highest circles, referred to Dr. Denslow's researches, and immediately a storm of criticism arose. Medical men who knew absolutely nothing of Dr. Denslow's work rushed into print to deny the "possibility" of his results, to question

his diagnoses, and apparently to throw all the discredit possible on his efforts. History, therefore, has repeated itself, and just because a man has dared to attack a disease that has been held incurable, he has had to run the gauntlet of suspicion, reproach and jealousy. This is all wrong. How much more worthy of modern progressive medicine it is to approach Dr. Denslow's work with an open mind, trusting to our scientific knowledge to appraise it at its true value, and to accept it or reject it as our judgment dictates. It is absolutely certain that time and experience will either place these ideas of Dr. Denslow's on a secure footing or consign them to oblivion. He submits well established data confirmed by recognized authorities, for the consideration of the profession. In the meantime he courts investigation and seeks cooperation to the end that the truth shall be ascertained. Can the medical profession do any less than meet such a spirit half way?

The dangers of newspaper medicine are constantly being manifested. Any simple statement by a medical man that can be given a sensational interpretation is sufficient to create a crop of headlines and a series of comments that will be most "fearfully and wonderfully made." Dr. Denslow's experience illustrates this tendency to distort and misquote. In no way did he intend to convey the impression that he had discovered a "cure" for locomotor ataxia, as the newspapers had it. He did claim to have elaborated a treatment that gave exceptional and quite uniform results in controlling certain of the symptoms of a distressing malady—and the papers did the rest. Another case in point was the comment made by the *Sunday World* concerning an article in our Sep-



C. A. L. REED, M. D.

AMERICAN MEDICINE,
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tember issue. In this comment Dr. Lewis was placed in the false and ridiculous position of questioning the germ origin of tuberculosis. The few abstracts from the article were so garbled and distorted that great injustice was done the author. He was credited with statements that he certainly never made and with deductions that he doubtless never dreamed of. Now, the *World* is a good newspaper and it is out of the question that the object of the comment on Dr. Lewis's paper was to intentionally misquote him or to wilfully mislead its readers. The harm is just as great, however, and just as difficult to undo as though the result of malice or dishonesty. Consequently, if newspapers will quote from scientific articles and draw deductions from medical investigations, their comments in every case should be prepared or at least edited by experts, not by tyros. The usual soundness of the *New York Times* and the *New York Sun* in discussing medical questions illustrates not only the justice but the common sense of thus referring such topics to qualified writers. It does not take any great shrewdness to suspect that their staff includes one or more competent medical men, and the corresponding gain to their readers needs no argument.

The selection of surgical supplies, it would seem above all things should primarily consider quality. Yet it is a fact too well known to innumerable surgeons that many a hospital is purchasing its supplies with a view only to cheapness. As a consequence, surgeons in such institutions are too often forced to use suture material, dressings, anesthetics and a hundred and one other essentials to surgical technic, that they would never think of employing in their

private practice, or in the treatment of members of their own families. The excuse of economic necessity is always made by hospital boards when criticism is directed against inferior surgical supplies, but the fact is apparently overlooked that the exercise of this particular form of economy is simply meeting one responsibility by creating a greater. A treatise might well be written on the criminal reprehensibility of using inferior surgical dressings or sutures, and it is an outrage for any hospital to ask the members of its surgical staff to place themselves in a position so open to censure and possible injury. This would be bad enough in itself, but the particular abuse under discussion comprehends much more vital dangers to helpless patients, who have no voice in the matter. Who can say to what extent unnecessary suffering, disappointment at faulty results, and even deaths following operations, have been due to the use of cheap dressings, sutures or other hospital supplies?

The plain fact is, that there can be only one standard in surgical technic, and that is the very highest human agencies can accomplish especially in regard to quality and safety. Any lowering of a single detail that may be subject to control, immediately makes every party to the act responsible, not only for the *actual* but for the *possible* harm that may result.

The National Formulary was a grave mistake. Many of those who a short time ago were its most ardent supporters now realize that this book will do more to injure honest scientific pharmacy than any other recognized evil. The story it tells is not science nor is it progress, but too plainly sordid gain and avarice. It seeks to pro-

mote profits in ill advised if not dishonest ways, and thus at the very outset destroys respect and confidence. The medical profession assuredly needs all the knowledge it can get along the line of scientific pharmacy, but when it asks for legitimate aid, and in response is promptly made the means of selfish ends, distrust and suspicion are engendered all too soon. Honest pharmacists if they wish to establish close relations with their medical patrons must therefore sooner or later repudiate the National Formulary. There never was a time when scientific pharmacy was on a higher footing than it is to-day and with proper effort it can very easily come to its own. Efficiency is the secret, with the establishment of a professional dignity that comes from capability and integrity. Hundreds of pharmacists are to-day enjoying the most profitable relations with their medical clientele simply because they have had self respect enough to subordinate profits, and magnify service. The pharmacist, therefore, who freely concedes that the doctor knows what he wants when he wants it, and acts accordingly, will find sooner than he expected that he has won a loyal patron and a firm friend. He will hardly jeopardize such a friendship by foisting upon it a manual of substitution.

The yellowness of the British Medical Journal is a new development of that sedate and conservative, though somewhat backward, periodical. It is remarkable that ever since George Washington accomplished the athletic feats of throwing a silver dollar across the Potomac and a sovereign across the ocean, the British have rarely seen anything good in America. Our athletes are treated with indignity and our ideas with scorn. It does seem that if they reject an American theory, the idea is quite likely to be cor-

rect. In commenting upon an American article, the sedate Journal says:—"The idea that a pair of spectacles can make a criminal a moral man need not be discussed outside the Yellow Press." As no one has ever suggested such a grand way of creating the millennium, the British Medical Journal has entered the ranks of yellow journalism. The dishonorable conduct of the English Medical Press, in ignoring and falsifying the matter of the use of trypsin in Germany, is now being repeated in respect to the effects of light, which it denounces as "little short of ridiculous"—the same old story of rejecting the new. They declared ridiculous Bodington's way of treating consumption in the open air in 1840.

The gratifying increase of subscribers to AMERICAN MEDICINE leads us to believe that our efforts in the direction of clean independent medical journalism are striking a responsive chord among thinking medical men. There can be no argument in regard to the legitimate place and value of official organs, society journals and publications under organized control. To ascribe, however, to such journals all of the virtues and honest intentions and none of the mistakes is as ridiculous as it is contrary to actual facts, and the sooner all connected with medical journalism realize that honesty and decency are not subject to monopoly, the sooner will we all reach the ideals we seek. AMERICAN MEDICINE has its field of endeavor, in which it is striving to labor with credit to itself and benefit to its readers. Its contemporaries, official or independent, are respected and admired for the qualities which they possess. May they succeed as we hope to succeed, and help us to reach better things as we stand ever ready to help them. There is a community of ideals that should make us collaborators, not competitors and antagonists.

ORIGINAL ARTICLES.

CHRONIC CONSTIPATION IN INFANTS AND CHILDREN.¹

BY

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It is not an easy matter to properly place chronic constipation as it occurs in infants and children, for while it is more or less of a relative term and the condition is frequently only a symptom, it is a symptom which leads commonly to disease.

Nor is the condition one which is readily recognized, for in the minds of the laity, constipation exists only when the bowels have not been evacuated as frequently as usual.

Therefore, in seeking for evidence of its existence, it is not sufficient to dismiss the subject when the answer has been given to the usual question:—"Have the bowels moved?" Constipation may be said to exist when there is lessened frequency of the movements, when the act of evacuation is more difficult of accomplishment than normal, when the stool is drier than normal, and when the total amount of the feces is much reduced.

It is not uncommon for more than one of these factors to be present at the same time.

The average young infant at the breast moves the bowels two or three times daily, but there are occasional instances in which

an infant will have but one evacuation daily, and even if observed over a protracted period there may be no untoward effects;—in such case constipation cannot be said to exist.

On the other hand, the bowel may be evacuated with normal frequency and yet the amount evacuated be so small that constipation actually exists, and in time will show its effect upon the general health of the infant.

The same thing applies if the evacuations are sufficient in number and in amount, but are deficient in fluid, causing the passage of hard, dry feces.

Again, the bowel function may be perfectly normal in nearly every particular, the child having one or more evacuations daily, but the time of the passage of the mass will be so slow that a latent constipation actually exists. Such children suffer from frequent attacks of digestive disturbance with more or less marked toxic symptoms and are almost invariably treated as though the trouble was primarily an infection of the intestines.

THE CAUSES OF CHRONIC CONSTIPATION.

These may be divided into causes within and causes outside the bowel.

Of the first division, we have the position and development of the infant's intestines and rectum which favor bowel inactivity. Early in infancy the rectum is placed more in the abdominal than in the pelvic cavity, and occupies a more or less vertical position. The ascending colon is very short and the large and small intestines are both proportionately longer than in the adult. This tends to lessen peristaltic movement;—lessened movement favors slower passage of the mass, and therefore dryness results. Dryness is further favored by the proportion-

¹Read before the Williamsburgh Medical Society, October 12, 1908.

ately large surface which allows of greater absorption.

The glands of Brunner and Lieberkuhn are not fully developed in early life and as they are active factors in bowel activity, this underdevelopment favors constipation by tending to dryness. The amount of intestinal juice may be sufficient, but it may be too viscid.

There may also be a mechanical obstruction in the intestine, or some condition which diminishes the lumen of the gut.

While some of the foregoing causes may remain in part active after the period of infancy, in older children the chief causes within the bowel are laxity of the mesentery and the winding course and size of the sigmoid. Occasionally, we find at autopsy, that the right side of the abdomen is practically filled by the sigmoid as it extends over on this side.

This latter finding is I believe due to a condition of the bowel which has been studied and observed enough to warrant its recognition as a complete pathological entity—congenital dilatation of the colon.

Congenital dilatation of the colon has an obscure etiology, but a rather definite symptomatology. We must divide the cases into two groups—one that is evident soon after birth, and the other that shows itself first after several months of life.

In the first group attention is directed to the condition because the meconium is not passed spontaneously as usual. The infant becomes restless and wakeful and may at times give evidences of slight prostration.

It is not long before the abdomen becomes enlarged and its walls more or less tense and the usual accompaniments of an

upward pressure of the diaphragm—dyspnea, unrest, and possibly cyanosis are added. Usually, one thinks of imperforate anus or rectum, but digital examination eliminates these and results in the passage of a small amount of meconium and usually a large amount of gas. If enemata are given, a large part of the fluid is retained and the effect is unsatisfactory.

Shortly after the taking of food, the gaseous distension of the abdomen is increased.

The second group usually exhibits a slight but distinctively chronic tendency to constipation from the day of birth until the time of weaning, or the time when partial weaning is attempted. At that time the constipation becomes more persistent and the gaseous dilatation of the abdomen more marked. Enemata behave the same as in the first group.

Of the causes which are not within the bowel, we have constipation as an accompaniment of many of the acute and chronic diseases. A high or prolonged elevation of temperature naturally diminishes the amount of fluid in the body and favors lessened secretion in the intestine. Any disease, whether acute or chronic, which considerably reduces the tone of the musculature also diminishes peristaltic movement.

Now, when the habit of constipation, even of short duration, is once established, it tends to chronicity.

Fear of pain is a very fruitful cause of chronic constipation, and an anal fissure is often the real cause of the trouble. Spasm of the sphincter without fissure is uncommon and requires surgical interference.

However the chief of all causes is faulty diet. In nurslings, this usually consists of

a lack of fresh water; in bottle-fed babies to a deficiency of fat or an excess of protein.

Likewise in older children, if there is a lack of those articles of food which stimulate peristalsis, constipation results.

The prolonged use of a sterilized or pasteurized milk will result eventually in constipation.

Although it is frequently referred to as a cause, I have not yet observed a case in which chronic constipation in the nursing mother was a direct cause of a similar condition in the infant, with the exception of those instances due to drug ingestion. Constipation in the mother is a most prolific cause of digestive disturbance in the babe and this in time leads to diarrhea which is quickly followed by constipation, and it is the indigestion in the babe and not the constipation in the mother which is the immediate cause. Tea drinking, if excessive, acts as an active cause of constipation. A very close second to diet as a cause, is habit. Let there once be an interference with the usual time of attention to the bowel function and the probability of the establishment of a chronic state of constipation is great.

THE SYMPTOMS—The symptoms for a time may remain purely local, but this is unusual. More often the general health and the nutrition are interfered with. From frequent or prolonged straining, there may be prolapse of the rectum in the infant or the development of hemorrhoids in older children.

Usually there is more or less flatulence, accompanied or unaccompanied by colicky pains, or the irritating mass may excite some inflammation. When this occurs, it is evidenced by tenderness and by the appearance of mucus and possibly blood in

the stool. Such children are usually restless, fretful and anemic.

The absorption of toxins causes nervous symptoms of a varied and sometimes severe nature. These are mostly headache, restless sleep or night terrors, general apathy and associated signs of an intestinal disorder. Not uncommonly, there is an elevation of the temperature.

In the rachitic child, the symptoms are more severe, and on account of the well known instability of its nervous system the symptoms may be at once misleading and alarming.

In addition to this, the condition is more obstinate because the bowel is deprived of that mechanical support and pressure which it should have from a good musculature and even the muscular coat of the intestine itself is deficient in tone. We cannot, however, rely upon these symptoms alone, but there must be an inspection of the stool. Individualizing each case we judge more by the character than the frequency of the movements. Remembering the normal, we make note of the frequency, the size, the consistency, the ease of passage and if necessary, the period occupied by the passage of food through the digestive tract.

DIAGNOSIS—The diagnosis of chronic constipation alone is not sufficient;—there must be a determination of the cause, and if possible, also of the site of the trouble.

The determination of the cause must take into consideration everything which affects the normal state of the bowel, and this involves primarily a most searching examination into the diet and habits in particular and the health in general.

With regard to the site of the trouble, a test meal is of value. We know that under normal conditions the food of a nursing requires from thirty to thirty-six

hours to pass from mouth to rectum. Now, if one meal is colored with carmine or charcoal and the time of passage of the first red or black stool noted, we can readily estimate the time occupied by the passage of the food.

This at once shows whether we are dealing with a latent constipation or not. If constipation be present and the time of passage is near to normal, it indicates that the site is the lower or middle portion of the large intestine.

An affection of the small intestine is indicated by white or gray colored stools, offensive breath and flatulence. When the insertion of a suppository is immediately followed by an evacuation it indicates the rectum as the site of the trouble.

TREATMENT—Treatment is hygienic, dietetic, local and medicinal.

The Hygienic Treatment requires that the child be supplied with abundant sunlight and fresh air;—both all day and the latter all night. Free exercise and of the sort that calls all of the musculature into activity is essential. A regular habit must be early inculcated. How early is it possible to train an infant to regular habits as regards the bowel function? From a large experience, I believe that at the sixth week of life such training should begin. This will be regulated somewhat according to the custom of the particular infant and if it has had one evacuation daily this must be kept up, but if accustomed to two, the times chosen will be twice daily. The infant should be held in the lap with its back supported against the chest of the nurse and then placed upon a previously warmed vessel. While in that position, the anus is gently irritated with the tip of the finger. Persistency soon brings its reward. This procedure may have to be repeated several

days but the infant soon associates the position and surroundings with the act of moving the bowel.

In the older child, nothing should interfere with its habit of attention to the bowel function. The hurry to get to school or play is an excuse that must not be tolerated.

It is almost needless to state that a similar time must be selected each day, if a successful habit is to be formed.

The Dietetic Treatment will vary as it affects infants or older children.

If a breast milk is too rich in proteid and is low in fat, regulation of the diet of the mother and suitable exercise will correct it.

If poor in both elements, forced feeding and enforced rest are indicated.

Deficiency in the fat alone is regulated by the administration to the infant of 1 or 2 drams of a 5% to 16% cream directly before taking the breast. But all the precautions engendered by artificial feeding must be exercised, particularly in the heated term. Olive oil may be useful in place of the cream.

Water should be given to all infants, particularly during the heated season and when over two months of age, the infant will be benefited by oatmeal water. I would mention the use of orange juice, not alone for its laxative effect but because I believe that every infant should have it daily beginning at the third month of life, on account of its antiscorbutic properties.

Mixed feeding will be the solution for some few cases, but the dangers of artificial feeding must always be borne in mind. If these measures fail, we are justified in the use of suppositories or enemata until we can undertake early weaning.

We are not so handicapped when the infant is artificially fed. It is then a simple

matter to change the proportions of fat, proteid or sugar, as we find either element at fault.

Here again the use of oatmeal water as the diluent is of known benefit. If the milk has been subjected to heating, use it in a raw state.

As the child approaches the time for accessory feeding, the dietetic treatment is simplified.

The amount of orange juice may be increased or prune juice substituted. Cooked fruits are valuable. The different cereals, whole wheat or bran bread, green vegetables and potatoes all add elements which will tend to correct the constipation.

The Local Treatment involves massage of the abdomen with the lubricated hand. The course of the colon is followed by the movements of kneading and this must be done once or twice daily over a protracted period. From five to fifteen minutes is required for each seance, according to the age and strength of the child and the urgency of the case.

Cool sponging with immediate towel friction of the abdomen will benefit mild cases.

Suppositories are immediate in result when the site of the trouble is in the rectum. In their selection it is only necessary to remember that gluten is less irritating than glycerine and therefore less effective.

Enemata of water are effective and particularly if glycerine be added to them, in the proportion of one dram to each ounce. In older children, I have obtained some good results from a cool spray directed against the abdomen for from one to three minutes, at the time of the morning bath.

Vibratory treatment is much like mas-

sage;—if it can be carried out properly, it is efficient, but too often the failure of result is attributed to the agent, when the method of its use is the real fault.

In the treatment of congenital dilatation of the colon, there is scant success from any known method, except the local.

Enemata are ineffectual unless fortified by vigorous abdominal massage to empty the bowel. After its accomplishment, the application of a tight, well fitting bandage gives all the possible relief that we may expect.

In selected instances, surgery has achieved some brilliant results, but the elective cases are few in number and the procedure a severe ordeal to child and parent.

The Medical Treatment should not be indulged in until all other measures have resulted in failure. And even when it is necessary to use drugs, they must be cautiously given and not to the exclusion of the aid offered by the previously mentioned methods. Medicine should be used, if at all, in conjunction with hygiene, diet and local measures. Just as soon as possible medication must be reduced and finally stopped.

For the immediate evacuation of an irritating mass in the bowel, to allow the elaboration of other means of relief, the use of a single dose of castor oil may be helpful, but it must be remembered that its secondary effect is constipating.

Therefore the use of equal parts of the oil with spiced syrup of rhubarb is more efficacious.

If an examination of the stool shows that there is more or less bile deficiency, calomel is indicated but its use should not be continued.

For more extended use, carbonate of magnesia in 2 to 5 grain doses is effective, as is also the milk of magnesia.

Milk of magnesia with equal parts of aromatic syrup of rhubarb is pleasant and effective.

And so we might go on and mention numerous medicines and combinations of the same:—phenolphthalein, licorice, rhubarb, senna, and a host of others which are more or less effective.

But after all, for steady systematic use, there is no remedy which approaches in efficiency, the various preparations of *cas-cara sagrada*.

It ought never to be used as a purgative;—such a use is an abuse of the remedy. It is a laxative and in its use as such, its effect is far superior to any other preparation of its class. Properly administered, it performs its function without disturbing the intestine unduly and at the same time acts as an intestinal tonic, limiting or preventing the usual secondary constipation which attends the use of many other agents.

By its proper use, I mean for one thing that it must be used in small doses. The maximum dose up to the eighteenth month should be twenty drops and to the fifth year, forty drops.

If such doses are not sufficient, instead of an increase, there should be the addition of an adjuvant. The aim must be to decrease and not increase. And so by its proper use the daily dose is steadily reduced, until in time its administration is entirely stopped.

42 Gates Avenue.

DANDRUFF AND INCIPIENT BALD-NESS.

℞ Resorcini, ʒj.
Betanaphtholis, ʒss.
Chlorali hydrati, ʒij.
Tincturæ cantharidis, fʒiv.
Tincturæ capsici,
Olei ricini, of each, fʒj.
Spiritus odorati, fʒiv.
Spiritus myrciæ, ad Oj.

M. et Sig.: Rub into scalp daily. Shake before using.—*Therapeutic Gazette*.

ADRENALIN THERAPY.¹

BY

SAMUEL FLOERSHEIM, M. D.,

New York City.

The introduction of suprarenal substance within the last decade as a therapeutic agent in the treatment of disease marks an epoch in scientific therapeutics. This agent is of no less importance today than is cocaine. For the revival of interest in this agent we are greatly indebted to Dr. W. H. Bates of New York, and his painstaking and diligent work has gone far in placing this invaluable and essential remedy before the profession.

The craze of modern therapeutics for active principles of drugs has been responsible for the commercial development of many suprarenal products. The best known of these preparations is adrenalin chloride, although we have other equally good preparations in suprarenalin, adnephtrin, adrin, epinephrin, suprarenin, etc. Suprarenal abstract in its crude form is not so often employed as formerly.

The active principle of the suprarenal gland has been called by many an alkaloid. It cannot be viewed in this light for the same reason that one would not call pepsin, the alkaloid of the stomach. The pepsin is to the stomach as adrenalin is to the adrenal gland. Adrenalin extract is actually a ferment derivative.

It is best known and most conveniently employed in solutions of 1-1,000 to 1-20,000, administered with sterile water according to the needs. It may, however, be used with solutions of cocaine or boric acid, but never with solutions containing metallic salts, oxidizing preparations, or strong alkalies, as these are incompatible.

¹Read before the Medical Society of the Co. of N. Y., May 25, 1908.

Adrenalin solutions keep for a long time if stored in air-tight paraffined, sealed dark vessels and protected from light.

Adrenalin has been employed locally, internally, by the stomach, subcutaneously and intravenously. I have never employed it either subcutaneously or intravenously, and do not believe its use by these means is necessary as a routine measure.

Adrenalin chloride is also employed as a nasal application, in suppositories for rectal administration, in ointment and in tablet form. Attempts have been made to produce it synthetically, but so far with little success.

EXPERIMENTAL THERAPEUTICS.

—Mills and Muhlberg¹ from animal experiments, conclude that adrenalin chloride is a valuable muscle stimulant. Martin and Pennington² state that when adrenalin chloride is used intravenously it is the most powerful cardiac stimulant known. It also stimulates the respiratory centre, increases general metabolism and raises body temperature. They also found that the bacteriolytic power of the blood was decreased by its use.

Loeper and Crouzon observed that the ingestion or injection of adrenalin chloride produced a hyperglycemic diminution of the blood ferments³; an increase, then a decrease of the number of red blood corpuscles, and in the hemoglobin. Leucocytosis, especially when Addison's disease was present or when the suprarenal capsules had been removed, was markedly increased. Maralino⁴ states that injections of adrenalin chloride increased the virulence of staphylococci, but Martin and Pennington above cited, make I believe, a better deduction in stating that the bacteriolytic power of the blood is decreased by the use of suprarenal extract. Noel Patton⁵ states that the subcut-

aneous administration of adrenalin in dogs and rabbits caused true glycosuria and glycemia, due in all probability to toxic action of the adrenalin chloride and not to the interference with the process of oxidation. Vosburgh and Richards⁶ state that injections of adrenalin chloride into the peritoneal cavity, and application of it to the pancreas, gave rise to marked increase of sugar in the blood. It seemed to them that this was due to the increased formation of sugar in the liver.

Simonovitch⁷, and Martin and Pennington (loc. cit.) found that dogs could ingest large doses without producing systemic effect. Exner⁸ found that when poisons such as strychnin, potassium permanganate, indigo, etc., were preceded by a solution of adrenalin injected into the peritoneal cavity of rabbits, the absorption of these poisons was considerably retarded. Coplin⁹ found that a marked arterial degeneration was produced by repeated intravenous doses of adrenalin chloride given for a long time; edema of the lungs was also observed. Loeb corroborates this statement. Pearce and Stanton¹⁰ observed areas of aortic sclerosis and aneurysmal bulging from degenerative changes, together with calcification of the vessel after injecting three m's 1-1,000 solution of adrenalin chloride. Klotz (ibid.) obtained nearly similar results.

Miller¹¹ in his experiment to determine whether arterial changes produced by adrenalin chloride were of toxic or vasoconstrictor origin, makes the following notes; the injection of adrenalin chloride is known to produce degenerative changes in the kidneys and liver, and further subcutaneous injection is liable to be followed by necrosis of the tissues of small animals. The administration of adrenalin chloride is

useful with amyl nitrite, and he found that though the nitrite produced a fall of pressure, yet the effects of the adrenalin chloride on the vasomotor system were still present. He found that in the animals so treated there was no gross microscopic evidence of arterial degeneration, nor any evidence of cardiac hypertrophy.

Koranyi¹² observed that simultaneous injections of iodine will prevent adrenalin chloride sclerosis in rabbits. Cummins and Stout¹³ used potassium iodide. Oliver and Schaefer¹⁴ found that the depressor nerve failed to act when the heart arteries were constricted by suprarenal extracts, thereby concluding in connection with other experiments that the adrenalin chloride had a direct action upon unstriated muscle.

J. Barr used adrenalin chloride as a muscle tonic, also to check the secretions from serous membranes. He believes that while adrenalin acts chiefly on the nerve endings, it has a direct effect on unstriated muscular fibres and is much more constant in its action than agents which act only through the vasomotor mechanism. Adrenalin blanches fresh granulation tissue where there is no sympathetic nerve and no larger blood vessels than newly formed capillaries.

R. F. Elliot (*ibid.*) convinced himself experimentally that adrenalin acts only through the sympathetic nervous system. According to this conclusion adrenalin would not have any effect upon the coronary arteries, the cerebral arteries, nor upon the pulmonary vessels, which are stated to be devoid of vasomotor nerves.

Crile¹⁵ in experimenting with intravenous salt solutions of adrenalin in surgical shock, states that adrenalin chloride increases the blood pressure by its direct action on the peripheral vessels. It should be given intravenously, slowly and contin-

uously, in the strength of 1-40,000 to 1-100,000. In his conclusion, he remarks that the intravenous injection of adrenalin solution should be given slowly and continuously and the effects carefully watched, with a blood pressure apparatus if possible. He states that the chief danger is the powerful effect of adrenalin on the cardio-inhibitory mechanism. He also states that adrenalin acts on the heart and blood vessels, but not on the vasomotor centre. In normal animals, in every degree of depression when the cervical spinal cord had been severed, the medulla destroyed or the animal decapitated, adrenalin chloride had a definite control over the blood pressure, raising it twice as high as normal. A decapitated animal was kept alive for 10½ hours by the administration of adrenalin chloride and artificial respiration. Adrenalin chloride in a solution of 1-50,000 was introduced into the jugular vein of a dog fifteen minutes after heart beats and respiration had entirely ceased. Normal blood pressure and respiration were reestablished with the aid of artificial rhythmic pressure on the thorax over the heart.

As a striking contrast to the above report on the production of atheromatous degeneration, we have within the past six months had two unique sets of experiments made, by Kaiserling¹⁷ who obtained negative results in rabbits from 94 days of adrenalin chloride injection treatment in which about 20 c. c. of the drug was used. He accidentally discovered calcification of the aorta in rabbits that were not subject to treatment. Miles and Johnson¹⁸ found that only about ¼ of the rabbits injected with adrenalin chloride showed arteriosclerosis, while in ⅓ of another batch of supposedly normal rabbits, untreated, arteriosclerosis was found. This leads us

to a study of the whole experimental subject over again. Beaman Douglass¹⁹ found that injection of adrenalin had a powerful influence on cell division, on development of protoplasm, on ciliary movements and on contractibility of tissue. Ch. Amat²⁰ states that adrenalin chloride is the most active known vasoconstrictor.

CLINICAL THERAPEUTICS.—Eye:—Adrenalin has been used with good results in acute and chronic conjunctivitis, trachoma, scleritis, iritis, glaucoma, ocular congestion, opacity of the cornea, etc. Dudley S. Reynolds²¹ employed adrenalin in injuries to the conjunctiva and in operations in general on the eye; as a hemostatic in the removal of foreign bodies from the cornea, in lachrymal obstruction, and atresia and over-secretion.

A pterygium was removed in less than three weeks by the daily application of 1-1,000 solution. (R. E. Graham, Columbia, Mo.)

A thickened cornea in pavus was successfully treated by Dr. W. H. Dobson, Surgeon in charge of the Forman Memorial Hospital, Weung Kong, Canton, China.

Dr. W. B. Marple²² reports the cure of an epithelioma of the upper eyelid by the daily trial application of adrenalin solution to the growth.

Ear:—Adrenalin chloride has been used during operations in and about the ear, for hemorrhages from violence and all other causes, congestion, chronic ulcers, congestion of the tympanic membrane, and for membrana flaccida; eustachian congestion and obstruction. T. P. Berens²³.

Nose:—Adrenalin chloride has been employed locally and internally in acute and chronic rhinitis, hypertrophic conditions of all the soft tissue of the nose; so-called

catarrhal conditions with marked discharge (Beaman Douglass.)

Mulford²⁴ reports the control of severe epistaxis by injecting ardenalin into the tissues adjacent to the artery or directly into the arterial current at the nearest accessible point to the bleeding area.

Cancer of the Rhino-Pharynx:—Berdier and Talabert²⁵ report the cure of a cancer of the rhino-pharynx by the daily injections of adrenalin into the growth. Deafness was soon overcome and after a month or so there was scarcely a trace left of the growth. In other cases the relief of pain by the injections was noticeable, even when the cancer was too far advanced for treatment to be more than palliative. They believe that some connection between the suprarenals and the evolution of the cancer seems a plausible assumption from the facts observed. Adrenalin has also been used in operations for adenoids, on the nasal septum to control hemorrhage in all operative work, and in idiopathic nasal and traumatic hemorrhage.

In hay fever, L. B. Lockard²⁶ reports favorable results from the use of adrenalin chloride in this affection. Others who have used it in hay fever are Gleason²⁷, S. Solis-Cohen²⁸, Mertens²⁹, Wilson³⁰. In the editorials of the *American Practitioner and News*, July 15th, 1901, *Jour. of the A. M. A.*, July 27th, 1907, p. 279; *Charlotte Med. Jour.*, Dec. 1907, and hundreds of others.

Warbric³¹ reports marvellous results from the local use of adrenalin in chronic nasal, post-nasal and pharyngeal catarrh.

Throat:—Adrenalin has been used in hemorrhage from the tonsils, pharynx and adjacent parts in general; in so-called catarrhal conditions of the upper air pas-

sages, in acute inflammations and in filtrations, acute edema, hemorrhages from the gums, tongue, cheeks, and in hoarseness. In tubercular laryngitis, the inhalation or spraying of the larynx with adrenalin chloride is followed by a cessation of pain, improvement in the voice, control of the hemorrhage and a disappearance of the dysphagia. Where there are ulcers present they have been observed to heal much more rapidly than by other methods of treatment.

Lungs:—Adrenalin has been chiefly used in hemoptysis. In pneumonia it is used chiefly for its action on the heart. In the congestive stage preceding pneumonia, large and frequently repeated doses of adrenalin may be administered in the effort to abort a threatened pneumonia.

I believe I have succeeded in aborting a number of cases of threatened pneumonia by the timely use of suprarenal extract. In acute edema suprarenal extract has often worked admirably. Voluminous rales heard all through the chest were markedly diminished soon after the internal administration of adrenalin; the breathing improved, cyanosis and gasping almost entirely disappeared and the heart's action became better. In tuberculosis, it was used chiefly for its effect on hemoptysis, as a means of controlling profuse expectoration and in acute edema.

Heart:—Here adrenalin has shown that it is one of the most powerful heart stimulants known. It has slowed a running heart, contracted a dilated and flabby heart, increased the flow of blood, lessened the murmurs when present, and has acted most admirably in cases where a heart stimulant was urgently needed. It has given excellent results when strychnin, digitalis, spartein, nitroglycerine, atropin and mor-

phin had given absolutely no benefit. I do not wish to be understood that in adrenalin we have a superior heart stimulant to strychnin or digitalis. In select cases only is it superior to them.

In myocarditis, Elsner³² used adrenalin chloride hypodermatically with marked success when strychnin failed.

Adrenalin chloride is especially indicated in cardiac failure and vasomotor paralysis occurring during general anaesthesia. In cases where there is a diminished blood pressure the hypodermatic use of adrenalin chloride has given many clinicians excellent results.

In pericarditis with effusion, I have drawn off most of the fluid first and then through the same needle applied adrenalin chloride to the pericardial sac without any subsequent untoward effects.

Blood Changes:—Loeper and Crouzon³³ found that ingestion or injection of adrenalin produced hyperglycemia, diminution of the blood ferments, increase and then a diminution of the number of red corpuscles, a lowering of the amount of hemoglobin; leucocytosis was present in many cases.

Hemophilula:—Although adrenalin chloride has been administered in this condition with benefit nothing has been found that would tend to throw any light on the effect of the drug in these cases.

Stomach:—Hemorrhages from the stomach due to simple ulcers, rodent ulcers, injury, or cancer, have been promptly stopped by the internal administration of adrenalin chloride. Halderman³⁴ states that copious hemorrhages from the stomach and vomiting were soon stopped by the administration of adrenalin chloride.

Hemorrhage in the New Born:—Dr. G. M. Tuttle³⁵, D. M. B., Mardin, Turkey;

and A. Bassler (N. Y.) have successfully treated hematemesis in the new born. Dr. Holt's cases of hematemesis have been reported. Dr. A. Bassler has kindly furnished me with the following two interesting cases.

Case 1. April 20th, 1907, E. L., aged 20 years. Diagnosis acute gastric ulcer. Three weeks ago complained of boring pains in the epigastrium. Vomits frequently and when eating solid food complains of burning and vomiting. On bread and milk diet the vomiting still continues. On April 2nd, she arose from bed and felt much better than usual. Ate a breakfast of coffee, fruit, cereal and rolls. Two hours afterwards while on the street she fainted; after being revived she vomited considerable altered blood mixed with some food. Vomiting continued during the day but no blood. At four p. m. ice bag was applied externally in the epigastric region. No food or drink was put into the stomach. Saline infusion was given. Ice was placed in the rectum. Antipyrin was administered by mouth and ergot hypodermically, 7 p. m., vomiting and the hematemesis continued. Pulse 132, weak and poor volume. The case appeared to be not improved. Drugs were stopped and 10 m. of adrenalin chloride 1-1,000 was administered by mouth every hour. At 10 p. m. vomiting and bleeding had stopped. April 3rd, at 8 a. m., patient felt better. Adrenalin was stopped and bismuth subgal. in 20 gr. doses every two hours was substituted, with rectal feeding every six hours. At 3 p. m., she began vomiting blood again, first in small quantities then as previously. This continued in severity until adrenalin chloride was again given, when the vomiting and blood immediately ceased. The administration was continued in 5 m. doses every three hours for four days, with bismuth subnit. in half oz. doses in the morning; rectal feeding, and ice bags about the waist. After this alkaline milk was given by mouth with bismuth subnit. Adrenalin was now stopped and other treatment continued. Patient got out of bed in two weeks, made good recovery and has since remained well.

Case 2. M. S., aged 41 years; hepatic cirrhosis with gastric hemorrhage; has had more or less stomach trouble for the past ten years. After his spells were over, would live on milk and fluid diet for two or three weeks. Two hours before I visited him at his house he vomited a large amount of blood, about 7.5 c. c. and several large blood clots. He complained of feeling faint, and was unable to see well; was very thirsty, much distressed generally and constantly sighing and demanding more air. Pulse 140, temp. 98, respiration 25, Sclerotics were jaundiced, skin mildly so, and tympanic. Liver about 5 c. m. mucous membranes pale. Feet and hands were cold, abdomen tender and below the free border of the ribs, and hard. Superior abdominal veins were dilated. Jan. 15th, hypodermic of morphin, gr. $\frac{1}{4}$, atropin every five hours for three doses. Hypodermic of ergotin every three hours. Ice by mouth and large mustard compresses to the abdomen. Vomited bright red blood twice during night. Jan. 16th, vomiting blood early in the morning; otherwise improved. Argent nitr. gr. $\frac{1}{4}$ in one ounce of water every five hours was administered; rectal feedings every six hours, and ice per mouth continued. At 3 p. m., vomited a large quantity of blood after a very restless attack. Bowels moved thoroughly afterwards, feces dark and tarry. A hypodermic of 10 m. of adrenalin chloride 1-1,000 every three hours, and 5 m. every half hour by mouth. This checked the hemorrhage almost immediately. This treatment was kept up for two days, then the hypodermic treatment was stopped and ice administered by mouth in larger quantities. Ten days after patient was able to be up and about, much improved. June 2nd, after a three weeks' debauch had another gastric hemorrhage in a saloon. He fainted and was carried home. I saw him two hours afterwards and while present he had another hemorrhage. The condition was the same as before described, excepting that the patient was more nervous and restless. Immediately gave adrenalin chloride in 10 m. doses every hour by mouth with morph. gr. $\frac{1}{4}$. This immediately checked the bleeding. Afterward bismuth, the argent nitr., soft food, and salts

in the morning. He was up and about in two weeks. Six months afterwards, while straining at stool he fainted and continued unconscious until found half an hour afterward. He was taken to the hospital, vomiting blood constantly. Regained consciousness but respirations grew weaker until he died on the afternoon of the same day. The treatment at hospital is not known.

Adrenalin has also been used in atony of the stomach by Baccarani and Plessi³⁶ who claim to have obtained good results from its use. Marricardi³⁷ also advocates the use of adrenalin in gastric atony.

Intestines:—Jones³⁸ reports prompt relief from the internal administration of adrenalin chloride in intestinal hemorrhage, but also with rest in bed, opiates, ice bags and ergot.

Thrush³⁹, Gaser⁴⁰ and others report gratifying results from the use of adrenalin chloride in hemorrhages from typhoid fever. I have administered adrenalin by mouth in a number of cases of hemorrhage from duodenal ulcers and obtained prompt arrest of the hemorrhage in every case.

Genito-Urinary Tract:—Prof. von Frisch⁴¹ used advantageously adrenalin chloride as a hemostatic while performing operations on the urethra and bladder. In cystoscopic examinations, in cases of vesical hematuria, preliminary irrigation usually caused a renewal of hemorrhage, but when the bladder was filled with 100 to 150 c. c. of solution of adrenalin chloride 1-1,000, the hemorrhage did not occur after subsequent irrigation and the cystoscopic examinations could be executed with perfect success.

Bartrina⁴² used adrenalin chloride for the same purpose as above stated with success. In operating on tumors of the bladder by suprapubic cystotomy, he applies locally to the tumor and

the immediate neighborhood a solution of adrenalin chloride. This suffices perfectly to render extirpation possible, with little loss of blood. In very narrow strictures in which it is difficult to pass instruments, a few drops of adrenalin chloride will suffice to reduce the swelling of the mucosa and materially facilitates the introduction of the sound. In difficult catheterization of hypertrophied prostates preliminary instillation of one to two c. c. of adrenalin chloride 1-1,000 into the prostatic urethra is of great advantage.

Howard⁴³ used adrenalin chloride in cases of urethral strictures with success. Zanoni⁴⁴ reports beneficial effects in cases of nocturnal enuresis from the administration of large doses of adrenalin chloride. Moresco⁴⁵ used adrenalin chloride in atony of the bladder with success. Chassagnac⁴⁶ has had good results from the use of adrenalin chloride in bleeding from the bladder, retention of urine in atony of the bladder.

Pinasse⁴⁷ has applied adrenalin chloride successfully in acute urinary retention. McMahon (Carlyle, Ill.) reports prompt relief in phimosis by the application of adrenalin chloride.

Skin:—Purpura hemorrhagica. A. E. Blackburn⁴⁸ reports that his patient was seized with a severe epistaxis; after treatment for several hours the bleeding was still free. The following morning the free bleeding had ceased but oozing continued. During 24 hours the patient voided 50 oz. of dark bloody urine and was in a state of collapse. Pulse rapid, of low tension and faint volume; skin clammy. Adrenalin was administered in 10 m. doses every two hours. Under this treatment improvement was noted. Ecchymosis did not increase; circulation improved; the quantity

of blood in the urine was diminished until at the end of the week it had entirely disappeared. Patient gradually recovered.

Cinanni⁴⁹ reports a cure of purpura hemorrhagica in 14 days, by the hypodermic injection of adrenalin.

Loeper and Crouzon⁵⁰ after failing to relieve a case of purpura by the use of various remedies found that the internal administration of $4\frac{1}{2}$ m. of adrenalin produced marked improvement in 24 hours, and in five days the patient was completely cured.

Ackerman⁵¹ reports a case of hemorrhagic fever after the 20th day of typhoid, where the administration of adrenalin was followed by complete recovery. There were small sub-conjunctival hemorrhages, petechial hemorrhages in the lips, and bleeding from the under surface of the tongue.

Bemis⁵² reports a case of purpura fulminans successfully treated by the administration of adrenalin. The patient, a child, was in a semi-comatose condition, and marked purpuric spots appeared on the scalp, back, chest, abdomen, extremities, hard palate and gums. The life of the patient was despaired of and as a last resort adrenalin was administered t. i. d. gr. 1, sodium salicylate gr. 2, was also employed. Two days after the child's condition was noticeably improved, and the treatment was continued; four days later the purpura was fading. Twenty days later the child was discharged cured. Baum⁵³ uses adrenalin solution in acne rosacea introducing it into the skin though scratches of the epidermis. McBowen⁵⁴ employed adrenalin in angiomatous diseases of the skin with success. W. Allan Jamison⁵⁵ as an adjunct to the light treatment of lupus, employed adrenalin and believes that with its aid he is able to obtain a greater effect

from the light than when adrenalin pressure is dispensed with in order to drive away the blood from the parts to be exposed to the x-ray. Reaction is more quickly obtained and the obliteration of the ulcer is accelerated.

Addison's Disease.—Conflicting reports have been received in the use of adrenalin in Addison's disease. Spillman and Perin⁵⁶ report success, others have been disappointed.

Osteomalacia.—Prof. Bosse⁵⁷ treated a parturient woman with osteomalacia with adrenalin who afterwards gave birth to healthy twins. The birth was normal, the patient nursing both babes and was in the best of health. Shortly thereafter he had another case of osteomalacia in the 6th month of pregnancy. The woman was scarcely able to stand and all attempts to move or walk produced great pain. After adrenalin treatment was resorted to there was remarkable improvement. Adrenalin was injected (1 c. c. of 1% sol.) after 12 days the patient was free from pain and began to walk about. Further experiments upon animals convince him that there is a connection between the suprarenal glands and the etiology of osteomalacia.

Whooping Cough.—Spraying the throat and larynx with an adrenalin solution 1-3,000 has been followed by amelioration of the condition.

Cancer.—Feeswigen⁵⁸ in cancer of the rectum used adrenalin chloride 1-1,000 twice a day over the cancer. He noted a decrease in the accompanying proctitis, a diminution in the discharge from the ulcer and a decrease in size of tumor. Ulcers became pale and hemorrhage checked.

G. Malno⁵⁹ relieves pain and hemorrhage in cancers of the breast, mouth, throat, face

and rectum by swabbing the ulcerated surface of the cancer with adrenalin.

Chas. R. Dickson⁶⁰ uses adrenalin in lupus vulgaris and found increased reaction as a result. Patients are also instructed to apply the solution to the edges of the patch night and morning and good results followed this treatment.

Neuritis and Neuralgia.—H. G. Carleton⁶¹ administered adrenalin hypodermically along the course of an inflamed left infraorbital nerve and obtained permanent relief in less than four hours, while the injection of morphin was of little material benefit. In neuritis of the palmar and plantar terminals morphin and atropin had been used without much success. Adrenalin was employed locally to each inflamed spot and in a short time relief was obtained without any further treatment.

Hemorrhage from the Navel in the New Born.—After the navel string has fallen off there is sometimes a persistent oozing from the wound. This has been promptly checked by applying locally adrenalin on a pledget of cotton to the wounded part.

Snake Bite.—Menger⁶² used adrenalin in conjunction with other remedies with good results.

Hemophilia.—Dr. O. Lange⁶³ saved the lives of a number of patients who were threatened with death, by the local application of adrenalin on gauze, to the wounded part.

Gangitano⁶⁴ uses cocaine and adrenalin in his operative work and reports that he has never had post-operative hemorrhage nor any inconvenience. Operations were resection of the upper jaw, ablation of a large goitre, a gastroenterostomy and a total laryngectomy.

Dr. Erdmann reported to me the beneficial effects of adrenalin in oozing from

peritoneal adhesions which were separated during operation.

Brodie⁶⁵ states that adrenalin is an antidote to chloroform narcosis. It acts chiefly as a cardiac stimulant.

It has been my misfortune to be present in a number of cases in which there was sudden collapse from chloroform narcosis during operation. Upon rapidly administering adrenalin and using other restorative measures at hand all danger was rapidly overcome. Adrenalin has been demonstrated to be particularly serviceable in these cases and has been used by many observers, notably Byington⁶⁶, Blondeau⁶⁷, Barker⁶⁸, E. Foisy⁶⁹, Braun⁷⁰ and others. E. Martin uses adrenalin and cocaine as a spray in the nose and throat before operation. He states that this greatly lessens the danger of cardiac and respiratory inhibition which may cause death in the early stages of anesthesia. This preliminary spray also does away with the severe laryngeal constriction and suffocation which is a most disagreeable part of an operation.

Crile⁷¹ states that the intravenous use of adrenalin is the most powerful and beneficial agent we have in the treatment of surgical shock. His work in this direction has been thorough and painstaking. Adrenalin should be used cautiously and in the manner described by him in order to obtain the best results.

Gynecology.—Cramer⁷² has used adrenalin with material benefit in inoperable cancer of the uterus before and after curettage of the uterus and before the use of the actual cautery. M. Gage-Day⁷³ administers adrenalin in 10 m. doses in cases of uterine hemorrhage with considerable success. E. G. Edwards⁷⁴ administers adrenalin in climacteric hemorrhage. After ergot, hydragric and digitalin administered internally

and the local application of cervical and vaginal tamponing failed to give relief, he was rewarded by finding a complete cessation of the flow from the use of adrenalin.

DeBrand⁷⁵ makes similar reports of success. Lack of time and space will prevent our going further with this subject.

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SECONDARY NEPHRITIS, WITH A CASE OF TRANSPLACENTAL TYPHOID INFECTION.

BY

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Specific pathogenic microorganisms are an established cause of nephritis, and such nephritis may be secondary to an infection elsewhere, or, less commonly, it may be primary in the kidneys. Reissner (*Ueber die Ausscheidungen von Fremdkörpern*. Göttingen, 1892), R. Kraus (*Zeit. f. Heil.* 1896, xvii), von Kleki (*Archiv. f. exp. Path.* etc., xxxix), Opitz (*Zeit. f. Hygiene*, xxix), and others, have shown that toxic bacteria pass through the renal tissues, especially the glomeruli. The diplococcus of pneumonia, the typhoid bacillus, the spirillum of relapsing fever, and the streptococcus pyogenes aureus have been found in nephritis in the kidneys, or the urine, or in both.

Pernice and Scagliosi produced true infectious nephritis by injecting the bacillus of anthrax, the bacillus pyocyaneus, the staphylococcus pyogenes aureus, and the micrococcus prodigiosus: in these cases the toxins from the bacteria were much less virulent than the bacteria themselves. Roux and Yersin (*Ann. de l'Institut Pasteur*, 1888 and 1889), Spronck (*Comp. rend.* 1889, cix, no. 7), and several others, caused nephritis by injecting diphtheria toxin.

Influenza, Weil's disease, diphtheria, and other infectious anginas induce nephritis almost as readily as scarlatina does. Next in virulence in bringing about secondary nephritis are pneumonia, acute articular rheumatism, typhoid fever, typhus fever, septicaemia, erysipelas, measles

and beriberi. Henoch (*Berliner klin. Woch.*, 1884, no. 2, and *Vorlesungen u. Kinderkrank.* 1889, p. 611) found it in both; Renard (*Arch. de méd. milit.* 1885, vi., p. 185), and several others reported nephritis as a consequence of parotitis. Acute inflammation of the kidneys has been observed in various forms of malaria, in tuberculosis, and syphilis. Perl (*Berliner klin. Woch.* 1893, no. 28) met it also in vacinia.

The classification of the nephritides is, of course, by no means settled. In hemogenous nephritis the condition of the kidney depends on the duration and the severity of the irritation; and this irritation is a pathological factor carried in by the blood,—toxins, specific bacteria, the defective blood in dyscrasias, and so on. If the cause of the inflammation is virulent, all parts of the kidney, the parenchyma, the Malpighian bodies, and the interstitial tissue are attacked together. If the excitant is not very strong, the parenchyma alone may be affected. Acute nephritis may then be merely parenchymatous, or, to use a better epithet, tubular; or it may be diffuse, interstitial.

When the disease tends to chronicity the parenchyma is affected and also the interstitial tissue: there is probably no such condition as a chronic purely parenchymatous inflammation of the kidneys.

The cortical portion of the uriniferous tubules is supplied almost wholly with blood that has been deprived of much of its water while passing through the glomeruli. This blood and the toxins it may contain are therefore concentrated, and that state makes the action upon the tubules more intense. Poisonous substances that have passed out of the blood into the tubules are also kept in a close and prolonged

contact with the epithelium there, and thus they bring about irritation. In the glomerular loops bacteria are likely to be caught and to set up inflammation. Hence the parenchyma is commonly first affected and readily broken down in specific diseases.

As to the secondary nephritic affections in infective and toxæmic diseases,—they are frequently characterized by an elevation of temperature, especially if uræmia is present; and it seems probable that the so-called relapses in some of these maladies, especially in typhoid fever, are not seldom due to nephritis rather than to a real recrudescence of the primary infection.

In the cases that are presented in this article, the affections considered are secondary inflammations of the kidneys caused by the typhoid bacillus, a pneumococcus, and the toxin of rheumatism.

Case 1. A multipara, aged 40-years, in the fifth month of pregnancy, underwent a severe attack of typhoid fever. Early in her disease she had persistent insomnia, which resisted hypnotics, and an intense headache. The blood-tension was high and she occasionally vomited. A few days after admission to the hospital, the headache increased; she vomited all food and medicine; she was extremely neurotic, and wept frequently. There was a leucocytosis of 10,000, whereas in typhoid fever the rule is that the more virulent the infection the lower is the number of white corpuscles. The urine then showed hyaline and granular casts, and much renal epithelium. Her leucocytosis was caused by the renal inflammation.

The condition of the kidneys persisted for two weeks with only a trace of albumin. Then the urine became alkaline; it contained many leucocytes, a few erythrocytes, a trace of albumin, and at times a few finely granular casts: this stage lasted for three weeks.

The patient recovered from the typhoid fever without miscarriage, the renal inflammation subsided to a great extent, and she was discharged from the hospital on the sixtieth day after the onset of the pri-

mary disease. There was a trace of albumin and some nephritis after her discharge from the hospital. A month later she was delivered of a poorly developed child, which lived for two days.

On the day of its birth a Widal reaction made with the child's blood-serum and a stock bacillus was positive in eight minutes.

A partial autopsy of the child was permitted. The spleen was the size of a large Lima bean, one-half the size of the kidney, and very much congested. The normal spleen at birth should be larger than the stomach, which holds an ounce to an ounce and a half. A smear made from the splenic pulp showed a very few bacteria which had the appearance and motion of the typhoid bacillus.

A piece of the liver was obtained, which macroscopically was congested; the kidney also macroscopically was congested.

From the spleen, kidney, and liver cultures of a bacillus were obtained, which afterward were found to be the typhoid bacillus. This bacillus gave a positive Widal reaction with blood-serum from a typhoid patient in the hospital; and later a second Widal reaction with the serum of another typhoid patient.

A fresh culture of the bacillus gave no Widal reaction with the mother's blood-serum, even when the mother's blood had not been diluted. A control reaction of the mother's serum with a laboratory bacillus was positive in ten minutes.

Microscopically the spleen, liver, and kidney were markedly hemorrhagic. A few typhoid bacilli were found in the splenic tissues, but no other bacteria.

Four weeks afterward, the bacillus from the child's spleen, which had been growing on agar, gave a positive Widal reaction, dilution 1:40, with the serum of a third typhoid patient, but the same dilution of the maternal blood gave no positive reaction with the infant's bacillus.

Lynch (*Johns Hopkins Hospital Bulletin*, vol. xii) reported one case in which he isolated the typhoid bacillus from the heart's blood, spleen and kidney of a fetus, which had undergone transplacental infection. He reported also one negative result. He found 16 undoubted cases in which the bacillus had been isolated, and in none of

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Four weeks afterward, the bacillus from the child's spleen, which had been growing on agar, gave a positive Widal reaction, dilution 1:40, with the serum of a third typhoid patient, but the same dilution of the maternal blood gave no positive reaction with the infant's bacillus.

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SECONDARY NEPHRITIS, WITH A CASE OF TRANSPLACENTAL TYPHOID INFECTION.

BY

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Specific pathogenic microorganisms are an established cause of nephritis, and such nephritis may be secondary to an infection elsewhere, or, less commonly, it may be primary in the kidneys. Reissner (*Ueber die Ausscheidungen von Fremdkörpern*. Göttingen, 1892), R. Kraus (*Zeit. f. Heil.* 1896, xvii), von Kleki (*Archiv. f. exp. Path.* etc., xxxix), Opitz (*Zeit. f. Hygiene*, xxix), and others, have shown that toxic bacteria pass through the renal tissues, especially the glomeruli. The diplococcus of pneumonia, the typhoid bacillus, the spirillum of relapsing fever, and the streptococcus pyogenes aureus have been found in nephritis in the kidneys, or the urine, or in both.

Pernice and Scagliosi produced true infectious nephritis by injecting the bacillus of anthrax, the bacillus pyocyaneus, the staphylococcus pyogenes aureus, and the micrococcus prodigiosus: in these cases the toxins from the bacteria were much less virulent than the bacteria themselves. Roux and Yersin (*Ann. de l'Institut Pasteur*, 1888 and 1889), Spronck (*Comp. rend.* 1889, cix, no. 7), and several others, caused nephritis by injecting diphtheria toxin.

Influenza, Weil's disease, diphtheria, and other infectious anginas induce nephritis almost as readily as scarlatina does. Next in virulence in bringing about secondary nephritis are pneumonia, acute articular rheumatism, typhoid fever, typhus fever, septicaemia, erysipelas, measles

and beriberi. Henoch (*Berliner klin. Woch.*, 1884, no. 2, and *Vorlesungen u. Kinderkrank.* 1889, p. 611) found it in both; Renard (*Arch. de méd. milit.* 1885, vi., p. 185), and several others reported nephritis as a consequence of parotitis. Acute inflammation of the kidneys has been observed in various forms of malaria, in tuberculosis, and syphilis. Perl (*Berliner klin. Woch.* 1893, no. 28) met it also in vaccination.

The classification of the nephritides is, of course, by no means settled. In hemogenous nephritis the condition of the kidney depends on the duration and the severity of the irritation; and this irritation is a pathological factor carried in by the blood,—toxins, specific bacteria, the defective blood in dyscrasias, and so on. If the cause of the inflammation is virulent, all parts of the kidney, the parenchyma, the Malpighian bodies, and the interstitial tissue are attacked together. If the excitant is not very strong, the parenchyma alone may be affected. Acute nephritis may then be merely parenchymatous, or, to use a better epithet, tubular; or it may be diffuse, interstitial.

When the disease tends to chronicity the parenchyma is affected and also the interstitial tissue: there is probably no such condition as a chronic purely parenchymatous inflammation of the kidneys.

The cortical portion of the uriniferous tubules is supplied almost wholly with blood that has been deprived of much of its water while passing through the glomeruli. This blood and the toxins it may contain are therefore concentrated, and that state makes the action upon the tubules more intense. Poisonous substances that have passed out of the blood into the tubules are also kept in a close and prolonged

contact with the epithelium there, and thus they bring about irritation. In the glomerular loops bacteria are likely to be caught and to set up inflammation. Hence the parenchyma is commonly first affected and readily broken down in specific diseases.

As to the secondary nephritic affections in infective and toxæmic diseases,—they are frequently characterized by an elevation of temperature, especially if uræmia is present; and it seems probable that the so-called relapses in some of these maladies, especially in typhoid fever, are not seldom due to nephritis rather than to a real recrudescence of the primary infection.

In the cases that are presented in this article, the affections considered are secondary inflammations of the kidneys caused by the typhoid bacillus, a pneumococcus, and the toxin of rheumatism.

Case 1. A multipara, aged 40-years, in the fifth month of pregnancy, underwent a severe attack of typhoid fever. Early in her disease she had persistent insomnia, which resisted hypnotics, and an intense headache. The blood-tension was high and she occasionally vomited. A few days after admission to the hospital, the headache increased; she vomited all food and medicine; she was extremely neurotic, and wept frequently. There was a leucocytosis of 10,000, whereas in typhoid fever the rule is that the more virulent the infection the lower is the number of white corpuscles. The urine then showed hyaline and granular casts, and much renal epithelium. Her leucocytosis was caused by the renal inflammation.

The condition of the kidneys persisted for two weeks with only a trace of albumin. Then the urine became alkaline; it contained many leucocytes, a few erythrocytes, a trace of albumin, and at times a few finely granular casts: this stage lasted for three weeks.

The patient recovered from the typhoid fever without miscarriage, the renal inflammation subsided to a great extent, and she was discharged from the hospital on the sixtieth day after the onset of the pri-

mary disease. There was a trace of albumin and some nephritis after her discharge from the hospital. A month later she was delivered of a poorly developed child, which lived for two days.

On the day of its birth a Widal reaction made with the child's blood-serum and a stock bacillus was positive in eight minutes.

A partial autopsy of the child was permitted. The spleen was the size of a large Lima bean, one-half the size of the kidney, and very much congested. The normal spleen at birth should be larger than the stomach, which holds an ounce to an ounce and a half. A smear made from the splenic pulp showed a very few bacteria which had the appearance and motion of the typhoid bacillus.

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esis on this basis seems to answer most questions as to the physiological function and identity of these fibres, though I believe actual proof is still wanting.

But as was the case with the centrifugal tract, so here, the localization of a lesion depends largely upon associated phenomena, the essential difference being that whereas in the former these phenomena concerned chiefly the extra-ocular muscles, in the latter they have to do principally with sensory disturbances, i. e. visual defects.

A few instances to be specific will be more illuminating.

A lesion of one optic tract peripheral to the chiasm, or destruction of the retina, by destroying the reflex fibres, will give us in addition to blindness in the affected eye total unilateral loss of the direct light reflex, as well as of the consensual reflex in the fellow pupil, but leaves us with preservation of the indirect reflex in the pupil of the affected side, because of the still existing integrity of the motor tract.

Such lesions peripheral to the chiasm are more frequently the result of fracture of the base of the skull than of tumor growth.

Going back a step farther, a patient presenting a bi-temporal hemianopsia with loss of both direct and indirect pupillary reflexes when light is thrown upon the nasal hemispheres of the retinas, but with the preservation of these reactions when light is thrown upon the temporal halves, must needs present a sagittal lesion of the chiasm with total or at least almost complete interruption of the decussation.

That such is the only possible condition is clear when we remember that the fibres from the nasal halves of the retinas decussate (both light-reflex and visual), while

those of the temporal halves take the direct paths.

This lesion is quite frequently found in the presence of acromegaly, resulting from an over-growth of the hypophysis.

The next point at which we should expect a characteristic symptom-complex as a result of destruction of the tract would be between the chiasm and the point of deflection of the light reflex and visual fibres, say, on the left side. This would cause left homonymous hemianopsia with total loss of both direct and indirect pupillary light reflex with illumination of the right side of either retina but with the preservation of both varieties of reflex with illumination of the left side of either retina.

Lesions far enough back to cause the hemianopsias are more frequently the result of new-growths, and less often follow fractures of the base.

A hemianopsia with normal pupillary reactions would indicate a lesion behind the point of deflection above alluded to,—in all probability, cortical.

Finally, the destruction of any portion of the reflex tract between the external geniculate bodies and the reflex center would give us reflex pupillary rigidity, but without limitation of the visual field, in other words, the tabetic pupil, though in this particular disease, as indicated later, the exact point at which the interruption occurs is still a matter of active dispute.

So definite, then, are the anatomical relations between the pupillary reflex and the visual fibres within the limits just given, that lesions affecting these structures can be located with great precision.

In contradistinction to such definite symptoms, those which are reflected in the pupil,

tray little more than evidence of intracranial pressure.

Neoplasms, embolism, hemorrhage, abscess, and more or less diffuse types of meningitis are scarcely to be diagnosed without rather a comprehensive study of the other symptoms pointing to diffuse or focal intra-cranial pressure, such as nausea, cephalalgia, choked disc, convulsions or convulsive movements, local paralysis, and in abscess and meningitis, fever, etc.

In traumatic lesions there is ordinarily an inequality of the pupils, the larger one usually being on the side of the lesion, but this rule is by no means constant. Here, local paralyzes generally of the extremities are our most certain guide in their localization.

In the meningeal infections, especially of the vertex, beside fever, relatively low pulse, and a tendency to paralysis of the extremities, the pupils are usually contracted at first, later dilated and frequently unequal. The same is true when the base is affected except that other cranial nerves are more universally involved than in the vertex infections.

In diseases of the spinal cord other than specific, instances of which are to be considered later, there are, generally speaking, no characteristic changes either in the pupils themselves or in their reactions.

In such affections as spinal transverse myelitis, caisson disease, and spinal meningitis, we do not expect pupillary symptoms either as diagnostic or confirmatory factors, and even in those instances in which there is widespread destruction, we usually find pupillary changes chiefly as a result of some lesion of the sympathetic which arises to a large extent in the floor of the fourth ventricle and leaves the cerebro-spinal axis through the anterior roots of

the upper dorsal nerves. Involvement of the sympathetic, therefore, indicates a high lesion, usually not lower than the second dorsal segment.

We must not forget that while stimulation or irritation of the sympathetic dilates the pupil, its destruction causes a myosis resulting from the now no longer opposed action of the oculomotor nerve.

High injuries to the cord from the action of fractures, accompanied either by hemorrhage or laceration, are fairly prolific of sympathetic phenomena. For the same reason, spinal syringomyelia, when not lower than the second dorsal segment, and neoplasms of the cord, may produce through their influence upon the sympathetic, distinctive pupillary changes, usually unilateral, less frequently bilateral, though even in the latter event, generally with pupillary inequality, and in most instances, (unless the effect is irritative rather than destructive), with myosis.

The part played by the sympathetic fibres in their course between the spinal exit and the ciliary ganglion is essentially extra-neurological, since in this situation they are not ordinarily subject to diseases peculiar to the nervous system.

Passing through the upper thoracic ganglion, the upper cervical ganglion, then along the internal carotid artery, over the gasserian ganglion to the ophthalmic division of the fifth nerve, then along its nasal branch to the ciliary ganglion and nerves, the pupil reflects those lesions to which these nerves are subjected by the structures with which they are in relation.

In the thorax they are frequently involved in a tuberculous pulmonary process and in aneurism of the aorta, while in the neck they will often show pressure effects of goitre or other tumor formation, such as

that resulting from Hodgkin's disease, or glandular infiltration from malignant disease of the throat.

In diseases characterized by over or under development, such as hypertrophy, or its reverse, in cretinism and myxedema, in fact in all nutritional diseases affecting the nervous system, there are not as a rule pupillary changes.

Diseases characterized by the intoxications having a selective quality with respect to the central nervous system, reflect nothing peculiar to themselves in the pupils.

In alcoholism the pupils may be somewhat sluggish, in epilepsy dilated, as in other forms of acute auto-intoxication, but in diseases such as paralysis agitans, and in poisoning from metals, they are, generally speaking, unaltered.

The same is true of most of the other cerebro-spinal diseases, in which supervening defections, when they occur, are of irregular importance, and when they do indicate a focal lesion, it is ordinarily but incidental to the general process.

Of equal interest and of as great importance are certain characteristic pupillary changes in the presence of specific diseases, chief of which is locomotor ataxia.

So well known are its appearances in this disease that its classical qualities of reflex rigidity and accommodative contraction with or without myosis need but to be mentioned. Yet the average physician is apt to depend too much upon the presence or absence of this condition in making a diagnosis, and while it justly constitutes one of our strongest confirmatory symptoms, it is by no means constant. Though statistics vary greatly as to its frequency, depending largely upon the stages of the disease at which the observations were made, as well as upon the personal equa-

tion of the compilers, still 60-70% may be accepted as an average proportion of the cases of tabes in which it is found.

Many subjects, while not exhibiting a total absence of the light reflex, will show but slight contraction, and even when a fair amplitude of constriction exists, a sluggish response should arouse an immediate suspicion of this para-syphilitic disease.

It appears not to be generally appreciated that the reflex rigidity exists not alone with respect to light but that it is true of all stimuli that can be applied whether through the sympathetic or otherwise.

The tabetic pupil may also be unilateral (infrequently) it may differ in diameter from its fellow, and it may be irregular but while these peculiarities may all be looked for, and expected, they are not common.

Again, while in this condition myosis is the rule, the pupil is not infrequently normal in diameter, and at times abnormally dilated; and this dilatation has a certain prognostic importance, in that it is more often associated with or followed by optic nerve atrophy than is the myotic pupil. Still, it is sometimes present as a late development of the disease without the atrophy, but with paralysis of accommodation, and finally, it may exist in the absence of all these complications.

The exact pathological basis of the Argyll-Robertson and myotic pupils has not yet been established with the precision which one might expect, for investigation of the regions theoretically indicated shows no constant lesion capable of producing the characteristic phenomena. While there are many theories, some of which are partly confirmed by experimental evidence, that which assumes the involvement of a special

reflex center in the posterior columns of the upper cervical cord and distal end of the fourth ventricle appears to have the firmest support. Clinically speaking, however, this is not of great importance, since the matter of cerebral localization is not a factor in the diagnosis, though it would be of intense scientific interest.

That the lesion, whatever its nature, is more or less diffuse, is shown by the fact that reflex pupillary rigidity and myosis may be present each without the co-existence of the other.

The two other conditions in which we find the Argyll-Robertson pupil are paresis and syphilis of the central nervous system, but in neither of these diseases, particularly the latter, is the symptom so common as it is in tabes. The matter of differential diagnosis is, however, rarely obscure, even in the early stages, since each of the maladies is almost sure to present other evidences, constitutional or local that are more distinctive than the Argyll-Robertson pupil, which after all is common to the group as a whole.

While in locomotor ataxia it was noted that the most distinctive feature was the myotic pupil, other defections being of secondary and minor importance, we find that in paresis one of the first and earliest and most constant phenomena is inequality of the pupils with a sluggish reaction to light, both direct and consensual. The tendency of the sluggishness is to be more marked in one eye than in the other. The less constant, hence minor deviations from the normal in paresis are myosis (less constant than in tabes) mydriasis (more frequent than in tabes), pupillary irregularity, and of course, the typical Argyll-Robertson pupil, supervening in about 30% of the cases, usually comparatively late in the disease, hence of less importance, from the

diagnostic aspect than in locomotor ataxia. In so many of these cases does paralysis of accommodation occur as a late development that one is tempted almost to regard in this disease the Argyll-Robertson pupil as the intermediate stage of a process resulting in complete pupillary paralysis.

In syphilis of the central nervous system reflex rigidity is still less common than it is in paresis; too infrequent to be regarded as a cardinal symptom. As an evidence of syphilis, it is much more often found in conjunction with paralysis of the external ocular muscles either on one side or both than it is in the two other para-syphilitic diseases. Instances of its disappearance under antisyphilitic treatment are recorded, an event which rarely, if indeed, never happens in the true para-syphilitic diseases.

Sporadically this pupil is found in association with other organic disturbances, but under all circumstances it indicates definite organic disease of the central nervous system.

The reverse of the Argyll-Robertson pupil is one of the rarest changes with which we meet, and occurs chiefly in those conditions in which, owing to unilateral blindness, accommodation has been lost. It may be congenital, and it may in isolated instances exist as an evidence of central disease, but so rarely as to have but little diagnostic importance.

Occasionally we find it as an evidence of post-diphtheritic paralysis, lasting at times for several weeks, but always eventually disappearing.

Total loss of pupillary innervation is less common than is the Argyll-Robertson pupil. While rare in tabes, it is often found in general paralysis and in syphilis, and when identified with the latter, it is very prone to co-exist with partial or complete ophthalmoplegia externa.

In functional diseases including those insanities not based upon a demonstrable pathology, the pupil is of but little clinical significance except in a negative sense.

In hysterical conditions when pupillary abnormalities exist, there is usually mydriasis, sometimes unilateral, generally bilateral, and as a rule with preservation of the light reflex. A permanent loss of this reflex in hysteria of course never occurs.

While in hysterical convulsions the pupils usually react to light, giving us a diagnostic point in the differentiation from epilepsy, it occasionally happens that here too they are dilated and immobile, though such reflex rigidity is admittedly rare.

While permanent and obtrusive differences in the sizes of the pupils is a very positive sign of central disease, (intra-ocular conditions being eliminated), slight and fugitive differences are ordinarily of but little import, and indeed, it might be said that absolute equality under uniform illumination exists only in a minority of cases.

A reflex frequently seen and often puzzling unless understood is hippus, a pupillary oscillation of variable amplitude elicited when the patient is made to observe a distant object. The pupils are seen alternately to contract and to expand though there be no effort at accommodation. This phenomenon is of no material importance beyond suggesting more or less nervous instability, to the degree that one might expect in the average case of neurasthenia.

Still another reflex of psychological rather than of clinical interest is the so-called attention-reflex, a reaction excited by placing in a darkened room with the patient, on a level with the eye, but not in the direct line of vision, a lighted candle, then requesting him to fix his attention up-

on it. Under these conditions the pupil contracts, the contraction being in direct proportion to the degree of illumination. If, however, the attention is relaxed, though the relation between the source of light and the line of vision remains unchanged, the pupil dilates.

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THE FRENCH CLINICS IN NEUROLOGY AND PSYCHIATRY.

BY

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In France, neurological teaching proper is not conducted systematically as a whole, as is sometimes the case in Germany, but is divided among the departments of anatomy, physiology, pathology, internal and clinical medicine, in addition to the course of the professor of "maladies du système nerveux" and that of the professor of psychiatry.

Many of the clinicians cited pay some attention to nervous diseases in their teaching; but the distinction that French neurology has attained is mainly due to the clinical teachers now to be spoken of.

At the Salpêtrière, Professor Raymond continues the famous Tuesday Clinic inaugurated by Charcot. It is here that the stranger is astonished by the multiplicity and bizarrerie of the manifestations of psychoneurotic patients. Charcot's love of the spectacular, however, no longer permeates the clinic; and accordingly, lay visitors are less numerous than in his day. To the neurologist, however, the clinic is all the more interesting on this account; for Professor Raymond's clear diction and constant reference to the patient before the clinic much diminishes the difficulty of following

in a foreign language the often highly complicated discussions in morbid psychology so often entered into before the class.

It must be remembered that a large number of distinguished collaborators assist the professor in conducting the clinics.

The psychological ideas of Raymond are largely founded upon the researches of Pierre Janet, who conducts what is known as the psychological laboratory of the clinic. It is here that Janet makes the observations which have brought him so much fame. Access, however, is only obtained through a personal introduction; for as is readily understood, an audience is not conducive to successful psycho-analysis. Janet, however, exposes his ideas annually in a course of lectures at the College of France, where he is professor. These are unfortunately only too open to the public, and the hall, not very large nor adequately ventilated, is anything but pleasant, especially as many of the audience seem to be actuated rather by prying curiosity than scientific interest.

Raymond's chief of the clinic is Claude, one of the two editors of *L'Encephale*, well known for his work on general pathology, and now much interested in the relations of psycho-neuroses to chemical modifications of the body. He often gives the clinics, and does so with great ability.

The very important selection of the patients from among the 40 or 50 who daily attend is performed by the assistant chief, a position formerly held by Guillaïn and Lejonne and now held by Felix Rose, who talks both English and German. Personal acquaintance with him is of great value to the stranger; for it is he who can direct one to any particular cases one desires to observe. The advantage of this is all the greater, as the only systematic course

given in Paris lasts only one month, in which time it is impossible to give more than a very cursory idea of clinical neurology. This course is given twice or thrice yearly for a fee of eighty francs, and while it is an excellent review of main points for a general practitioner, it is of little service to the neurologist.

Besides the preceding, its teachers include Alquier, who has charge of the pathological laboratory of the clinic, and whose work on "*Pott's Disease without Deformity*" has excited so much attention; Dupuy Dutemps, who conducts every Wednesday the ophthalmological examination of each case admitted into these wards and of those outpatients thought to require it; Gellé who attends every Saturday to examine ears of those referred to him; and Huet who is in charge of the enormous electrical and mechanico-therapeutical service which every afternoon treats about one hundred patients.

For in-patients, there has been provided a ward of men for the professor's teachings, for the Salpêtrière is an asylum for women only.

There are three large wards in the infirmary, and about five hundred other chronic invalids under the charge of the professor. Access to these is most courteously extended to any competent physician, more especially if he desires to conduct a special research. The clinic of course is not confined to the Tuesday demonstration but takes place every morning of the week, Friday being the day of the professor's formal lecture which is nearly always a clinical one.

Similar methods obtain at the clinic of Dèjérine in the same Hospital; for though he has no special male wards, he has three

large wards in the infirmary as well as a special block of chronic patients. He also is most courteous in extending facilities to strangers. Every Wednesday, he himself conducts the out-patient clinic, examining each patient before the students.

He gives also a course of clinical lectures in the spring in the afternoons. He has instituted the famous *Salle Pinel*, which is one of his wards reserved especially for the treatment of the psycho-neuroses by isolation and psychotherapy. He has thus economically placed within the reach of the hospital patient this valuable therapeutic measure, and delights to exhibit its successes to visiting physicians, on Monday, Thursday and Saturday mornings.

He also has a pathological laboratory and it is here that much of the work for his famous anatomy of the nervous system has been conducted by himself and his equally gifted wife, Madame Klumpke-Dejerine, who is an American, by the way.

Thomas is the principal coadjutor in this, and is the chief-of-clinic also. He has not, however, the same taste for psychotherapeutics as has his master. A large number of aphasics and preparations of aphasic brains which Dejerine is very glad to show, will afford much instruction to the neurologist interested in the present controversy regarding that disorder.

The initiator of this controversy, Pierre Marie, has charge of the neurological and general medical service at Bicêtre, an asylum for males similar to the Salpêtrière. It is unfortunately rather far from the centre of the town; but a visit any Saturday morning is well worth the trouble; for Marie possesses a collection of rare pathological specimens which he is very glad to show his visitors. He also has a large number of aphasic brains, which he some-

times shows, stating why he disagrees with the classic doctrines regarding aphasia. He also is willing to give access to special workers, more especially if they wish to study any of the pathological material of which he has accumulated an enormous amount. Crouzon and Leri were both pupils of his, and most of their work was done in his laboratory.

Marie is agrégé; but though not now on the active list, he gave a course in 1905-1906. To the writer, it was perhaps the most interesting which he attended during his two years residence in Paris; for he spoke less, and more slowly, and demonstrated the cases more than did the majority.

More accessible are the clinics of Ballet on Saturday, and of Brissaud on Wednesday, at the Hotel Dieu.

The latter is much occupied by his work as expert before the tribunals as well as by his professional work in "*Pathologie Interne*," and is in consequence not very regular, and has not maintained his former preponderant interest in neurology. Sicard and Meige often assist in the clinic. The former's work upon the cerebro-spinal fluid is of wide world renown; and the latter's treatise upon the *tics* and their treatment is now classic, and has been translated into several languages. His Iconographic work, too, is of great value. He is, besides, secretary of the Paris Neurological Society, whose meetings no neurologist should miss. In common with the clinics, they are open and free,—behind the bar however. They take place on the first Thursday of every month from November to July, and represent a gathering of more distinction in the neurological world than that of probably any other purely local body in the world.

Ballet conducts his own out-patient clinic; and as he has psychiatric tastes, the fascinating borderland cases bulk largely among his patients. His method of exposition is most graceful, as well as clear. He also is the soul of hospitality as regards his clinic, and the writer received much edification from some of the cases he studied there. Ballet too has a laboratory conducted by Maurice Faure, and gives a course on Sunday mornings from February to Easter to which his gifts of exposition and ingenious choice of illustrative cases attract large numbers. The rest of the week he spends in ward teaching and drilling his students, of whom he has a large following, in clinical methods.

He too does much work in his capacity as expert.

But the most interesting of all the neurological clinics is that of Babinski at the old Pitié (this mediaeval wooden-floored building is being replaced by a handsome new one); for it is the one that préeminently shows how a great neurologist conducts the examination of patients in practice. Babinski not only has a technic, but knows *how* he has it and *why* he uses the one he employs. His methods of eliciting reflexes and of testing suggestibility are both precise and rigorous without being pedantic. Besides, it is one of his pleasures to explain the whys and wherefores of his practical applications of his doctrines. He verifies for himself every observation, even the electrical reactions, leaving to his assistants only the preliminary searching of the details he himself checks. These are Charpentier and Delherm, (the latter a pupil of Apostoli,) who are also the electro-therapeutists, and Chaillout the ophthalmologist. Wednesday morning is the out-patients'

clinic, and a series of Saturday morning conferences begins in May.

No one could more clearly demonstrate that clinical neurology requires a technic as rigorous as that of any other branch of medicine than does Babinski when he exhibits the fallacies lurking in the haphazard or slovenly methods so often employed even by professed neurologists.

His pathological laboratory is in charge of Nageotte, the French Cajal, who has so long fought for the doctrine of the radicular causation of tabo-paralysis through the medium of a direct syphilitic meningitis. Nageotte now has his own service at Bicêtre as well, having succeeded the lamented Féré. He has also another laboratory in the College of France.

The opportunities in psychiatry are equally good; and the teaching is better; for in none of the foregoing clinics is there any of that direct personal instruction in neurological diagnosis without which the acquirement of mastery is so long and difficult. The student must rely upon himself in applying his knowledge to the examination of patients, for there exists no formal instruction such as may be purchased so readily in Germany.

In psychiatry, however the recent institution of the "Institute of Legal Medicine" for the purpose of giving additional training to physicians seeking the posts of experts before the tribunals, has afforded an unexampled opportunity for the attainment of facility in the examination of the insane for medico-legal purposes. This department of the Institute is conducted by the Professor of Psychiatry, Joffroy, with the aid of his chiefs-of-clinic, Vurpas and Dupouy, the successors of Rogues de Fursac and Jouquier, who drill the pupils

thrice weekly in the examination of known and unknown cases. There are in addition systematic and clinical lectures, while on Saturday afternoon Dupré at the Special Police Infirmary, where he is Special Police Psychiatrist along with Legras and De Clerembault, discusses before the class cases selected from the vagrants and criminals whom the police suspect of mental alienation. On Tuesday afternoon, he also drills the class in the examination of such cases. In the summer, he also gives systematic lectures on legal psychiatry. Personal acquaintance with Legras, the successor of Garnier as chief of the Special Police Infirmary, or of De Clerembault, the third physician in the service, will enable the visitor to assist at their examinations of suspects. The opportunity given by this cannot be too highly spoken of; for practical men are seen carrying out their own methods in actuality, and the student may select from them those he believes the most efficacious.

The cases referred from the police, as also those certified insane from the hospitals or by private physicians, must all appear the next day before the Bureau of Admissions, which is in charge of the doyen of French psychiatry, Magnan, also at St. Anne. Here are seen by him or his assistant, Simon, over four thousand cases per annum. He is exceedingly affable to strangers, speaking English fairly well; and the invaluable opportunity of watching him at work should be missed by no visitor to Paris who is interested in the nervous system.

Another open service of psychiatry is that of Denis at the Salpêtrière. He gives a course of clinical lectures during the summer in which he often out Kraepelins Kraepe-

lin. His views on dementia precox and the manic-depressive psychoses are receiving more and more adherents. At his Friday out-patient clinics a large number of neurological patients also appear. The psychologist, Bernard Leroy, is conducting in this service psycho-analytic researches of the kind that have brought fame to Pierre Janet. He is exceedingly thorough and auto-critical, talks English with ease and correctness, and is exceedingly amiable in discussing his views, although the refined nature of his work precludes any large following.

Roger Voisin has, at the Salpêtrière, a service of epileptics and defectives, and also gives a series of clinics. They take place on Thursday mornings in the spring. He is also friendly to strangers. He is one of the few remaining advocates of systematic hypnotic treatment, and is the President of the Society of Hypnology of which Berillon is the most active exponent.

The clinic of the latter in the Rue St. André des Artes is patronized more largely by the curious laity than by the serious physician, though many of these visit it from time to time in their search for information. He is assisted by P. Magnin, Farez, Regnault and others, and a course is given in the spring in which many excellent things are heard, provided allowance is made for the strong bias in favour of extensive hypnotization which tinctures the work of the school.

No psychiatrist can afford to leave Paris without seeing Chaslin, the resuscitator of the *confusion mentale* syndrome, and Ség-las, whose fine psychological analysis has done so much to enlarge our conceptions of disordered mental processes. Both are at Bicêtre, the former now being in charge of the wonderful Bourneville service for

the education of defective children, which should be seen by laymen as well as by physicians. Thursday and Saturday mornings are the clinic days. Bourneville still conducts a private school for the education of children of slow development. It is at Ivry, and visitors are welcomed.

Another asylum which should be visited is Villejuif, where there are the services (largely criminals), of Pactet and Colin, Auguste Marie, who also gives a course at the school of anthropology in the spring, generally concerning the sociological aspects of psychiatry; and Toulouse, who with Piéron, and the lamented Vaschide devised a wonderful technic for the quantitative estimation of sensations.

The school of anthropology, where Broca once lectured, gives popular lectures and demonstrations, many of them with psychiatric bearing, generally in its public aspect. Manouvrier generally has something to interest physicians in his yearly course. There are now numerous other such organizations for the diffusion of learning, and to many of them prominent men of science gladly lend their assistance. The clarity with which French scientists expound their ideas makes it well worth a visitor's while to attend as many of these conferences as he can find time for. Among such Institutions are the Collège des Sciences Sociales, and the various branches of the Universités Populaires scattered among the suburbs. A small fee enables anyone to attend those which are not free.

Near Paris, are the asylums of Vaucluse and Ville Evard. Sériex at the latter has inspired quite a school of psychiatry, and the work of Décosté and Pascal is exciting much attention. At least one visit should be paid here, and if possible an-

other to see Legrain, who has a service of alcoholics.

More might be said about the opportunities for hearing ideas in Paris, but with what has been already mentioned the visitor will find it all too difficult to do half that he would wish; and unless an extended stay is made, he must choose between confining himself to one branch or clinic; though he be as industrious as the bee, the sips which will be all he will be able to take, will be so far from exhausting the sweets in any one flower that the pleasure of his visit to Paris will be tempered by regret for the smallness of the amount he has been able to imbibe from the vast and countless corollae of the luxuriant flowers of French science in magnetic Paris.

THE HOT BATHS AT HOT SPRINGS.

BY

M. R. RICHARDS, M. D.,

New York City.

Should any of you desire to send patients to Hot Springs, please don't tell them about the many changes they may have to make "en route." I had to do this four times from Mobile, Ala., missing trains at each junction. For one who can walk and help himself, that makes no great difference, but for a very sick person, that is another matter. One hears of the gradual evolution of Hot Springs from a wilderness with a stage coach and primitive tub, "Rat-hole" to better facilities of approach, better bathtubs, a free government bath, then to hotels with elevators and private baths. Seeing the importance and value of these waters, the U. S. Government bought and made a reservation of lands and springs. There are forty-seven springs all being un-

¹Read before the Harlem Medical Association, New York, March 4, 1908.

der government control. Thirty dollars (\$30.00) per tub per year is charged by the United States for use of the hot water, and all of same are under government supervision. One need not fear now, what was formerly true, viz.: a drumming system of the hotels. Horse racing and gambling have also been entirely done away with.

The town is located in a valley between the East and West Mountains. All the springs flow from the East Mountain, and are carefully guarded by stone or brick structures. The average temperature of the water as it flows from the ground is about 135° F. This is piped to cooling tanks in various parts of the town, and distributed to hotel and all bath houses. The U. S. Government treats here its naval and military cases of rheumatism, arterio-sclerosis, joint troubles, lues, etc., in a very fine hospital, and has built most beautiful parks and drives over both mountains. About sixty thousand patients visit the springs annually. This number could be increased many times, if proper care were taken at the various bath establishments, and the diet of patients properly looked after. More of this later. The U. S. Government provides free baths, one hundred and fifty thousand annually, at a cost of 2½ cents each. There are about five thousand indigent sick using these baths.

The baths seem more efficient in cold than in warm weather. Like all health resorts there is a special season, December, January, February and March, but many come and go the year round.

One may picture Hot Springs as a place of magnificent hotels and costly bath houses and a place where more chronic cases gather than at any other resort in the world. One would suppose every hotel

equipped with a diet kitchen, as are those of foreign resorts, where doctors have only to prescribe certain diet lists for patients, who present them to the head waiter or at the office, and are handed a menu based on the list number, and served with nothing not thereon.

One would expect the baths and bathing systems properly attended to and administered as prescribed. Not so. There are no arrangements such as we find at the European springs. Patients are sometimes bathed hurriedly, or for fifteen to twenty minutes instead of eight to ten as advised by physicians. No scientific accuracy is attempted. The attendants are negroes who as a rule are very strong, but a most distressing feature is their profuse perspiration. Some female attendants carry out instructions carefully, and a few males try to do the same. Bath towels are generally dried on the radiators (should be dried in the air), and the baths are sometimes so busy that the rooms are not aired sufficiently.

The late Dr. Gebhart said in speaking of a bath of this water at 98 F., as compared to a bath of ordinary water of same temperature, "The heat of the body is raised from 1° to 4° F. The action of the heart is augmented both in frequency and force, often increasing 25 per minute, all the secretory organs becoming aroused into greater activity."

Dr. Jelks said, "May it not be possible that much of the good we derive from these waters in the treatment of neurasthenic and broken down patients generally, is by the correlation of heat to electricity and the latter of vital force?"

Through the kindness of Dr. E. H. Martin I have obtained much of the data in this description.

He says, "Taking the water internally adds to the rapidity of action of the bath. The subject when removed from the bath sweats profusely as when sweating off a fever. In about forty minutes the temperature is normal. Where does the increase in temperature come from? Some quality of the water has started a great increase in cell activity throughout the body. The blood cells work faster, the cells of the bone marrow becomes more active, the cells of every organ must feel the stimulus, the muscle cells give up waste products as after severe exercise, and this general increased metabolism causes a rise in the body temperature." Dr. Martin goes so far as to direct his patients to remain in the tub until thermometer under tongue shows 101° F. or more. Several times I tried this and my temperature arose to 101°, bath at 98°. I have since tried this in plain hot baths at 98° but temperature did not rise above normal, nor was the pulse rate accelerated except from the muscular exertion. Many cases of chronic malaria are benefitted by these baths.

The presence of radioactivity has been proven by the U. S. Government experts, Profs. Boltwood and Pratt of New Haven, Conn. They apparently found a radioactive gas. The late Drs. Gebhart and Jelks, before mentioned, entertained ideas of the above action which were published. Prof. Schmidt, University of Missouri, has reported that the tufa deposited by the water contains a salt of radium or at least is radioactive.

Dr. T. reported to me Nov. 5th that through the negligence of his bath attendant that morning, he remained 20 to 25 minutes in the tub and when he finally secured a thermometer his mouth temperature was 104½° F! He was prostrated for several

hours, but later felt that the excessive reaction had greatly benefitted his condition. Temperature of water 98° F. when bath began, probably 96° or lower at end of bath. His is a case of inflammatory rheumatism of almost all joints.

Care must be taken in first baths, particularly ladies, some of whom faint or get very severe headaches. Men are frequently troubled with headaches, or feel very tired if bath is too lengthy.

There is a lack of information among the physicians of the U. S. regarding the Hot Springs baths. It is not merely *hot* water bath. It is much more. The baths are taken from 90° to 100°. Ordinary water, no matter how hot, will cause no rise of temperature in a healthy person immersed therein; possibly the thermic centres guard against any increase of temperature from conducted heat. When a person, however is immersed in a bath of Hot Springs water at a temperature even lower than that of the body, the temperature rises quite promptly and if left in the bath very long, the pulse increases in rapidity correspondingly.

There are thousands of cases of arteriosclerosis and kindred diseases, going every year to foreign resorts for baths to reduce the blood pressure. Hot Springs baths reduce this pressure much more than any of the foreign baths.

Elimination through the skin is shown by the profuse perspiration and by the uric acid eczema which occurs in certain cases from the early baths; disappearing, however, after a number of baths have given sufficient elimination. The specific gravity of the urine is usually increased even when kept at or above normal quantity. Constipation frequently occurs at first. This is not due to any astringency of the water

which is drunk during the bath (two to four glasses at bath temperature), as it occurs even if no water is taken by mouth. Mild saline purgatives usually suffice to overcome this.

The quantity of iodide of potash taken by some patients without great disturbance while undergoing the baths is astonishing. Several took as much as six or seven hundred drops saturated solution per day. The sizes of the droppers used varied much, but I measured the drops in a graduate glass, and found that about two (2) drops equaled gr. I.

Baths can be had up to 120° F. but these are never advised. They are usually given every day, but many can only take them every second or third day. A glass of hot water is taken at beginning of bath and another after the attendant rubs the patient with a glove. The price of baths ranges from \$4.00 to \$11.00 a course of twenty-one. Attendants get \$1.00 for seven baths.

In the treatment of specific cases very large doses of iodide of potash are given, beginning with ten m. of a saturated solution, increasing five minims after each meal until symptoms of iodism appear. At same time inunctions of mercurial ointment are made by negro bath attendants, with rubber glove daily, at the modest charge of \$3.00 per week.

Board and lodging may be had from \$7.00 to \$50.00 per week, the latter with private bath (Hot Springs water). Rooms in flats for light housekeeping are plentiful and not expensive. Most patients carry collapsible metal cups to drink the hot water from fountains placed by the Government along the streets. I met many patients who returned periodically to take a course of the baths. While many im-

portant improvements could be made in the use of these valuable baths, I would strongly advise any one of you to visit Hot Springs, should opportunity present itself.

TWO INTERESTING SURGICAL CASES.

BY

CHAS. E. MCGIRK, A. M., M. D.,
Phillipsburg, Pa.

Multilocular Cyst of the Right Ovary Found in a Unique Position.

Mrs. N., aged 56 years, was referred to me May 26th, 1908, with a letter from her physician stating that she had a tumor in the epigastrium, probably of the stomach and malignant. While under the care of one physician in November, 1907, the tumor, which to her knowledge was of only three months standing, began to enlarge when poulticing was employed. After some little time the tumor began to point and was lanced, when, according to the patient and corroborated by the husband, at least a gallon of amber colored fluid flowed from the wound. Poulticing was continued until the wound healed.

On inspection an enlargement was seen midway between the umbilicus and xiphoid cartilage, the most prominent point being midway and two and one-half inches to the left of the median line at which point was seen an old cicatrix about an inch in length. The tumor moved with the abdominal wall during respiration. At no time during her illness was she troubled with vomiting or pains which would be described accompanying a malignant growth of such size. Her only complaint was a pulling, sense of fullness and pressure after eating, and of a general decline. Palpation revealed a tumor in the position as described, irregular in outline and about seven inches in diameter, with a limited motility from right to left but not movable either upwards or downwards. There was a positive fluctuation. The mass from symptoms present and the prior history

was unquestionably cystic, but its exact nature could not be determined. Fearing that it would in time become malignant an exploratory incision was advised.

On May 27th an incision was made in the median line three inches long directly over and down to the tumor which was seen to be cystic. The incision was enlarged downward and the omentum which was adherent to the cyst from above was ligated and freed. A dense adhesion to the abdominal wall one inch in diameter at the seat of the old cicatrix was then divided and after freeing a few adhesions from the stomach and transverse colon, the cyst was freed and drawn out of the incision. A wide pedicle extremely vascular but not adherent led from the cyst downward and to the right. The abdomen although flaccid would not permit me to trace the pedicle through the incision already made so it was enlarged around and to the left of the umbilicus, when I was able to determine that the pedicle consisted of the right broad ligament with its accompanying vessels much enlarged. I ligated and removed the mass which was found to be a multilocular cyst of the right ovary. On examination the cyst was found to contain three compartments, the one which had been adherent to the abdominal wall containing six ounces of pus and debris, the other two containing respectively six and eight ounces of amber colored fluid.

This case is of interest in that there was no history or symptoms of pelvic disease, and because of the unusual position of a tumor of this character. It shows that in making a diagnosis of tumors in the epigastric region the possibility of an ovarian cyst, or pedunculated fibroid, should not be forgotten.

Strangulated Inguinal Hernia Due to Hemorrhage of Unknown Origin Within the Intestine.

A hemorrhage within the intestine contained in a hernial sac is not given as a cause for strangulation in any literature to which I have access, and if reported must be of extremely rare occurrence.

The following is a case which came under my observation:

Harry M., a Slav, 32 years of age, 6 ft. tall and weighing 200 pounds. Had never been sick since childhood until July 15th, 1908, when about noon he noticed a rapidly increasing swelling of a pre-existing reducible indirect inguinal hernia. As the swelling increased pain developed and became worse in proportion. I saw him at 5 p. m. and on examination found the scrotum presenting the appearance of an immense hydrocele, with well marked fluctuation. Although the history was imperfect on account of his inability to speak English, a diagnosis of hernia, possibly strangulated, and a rapidly developing hydrocele was made and an immediate operation was advised which after much persuasion was consented to. An incision was made over the most prominent part of the tumor about an inch in length and down to the fluctuating mass which was black. This was opened and about one quart of black non-clotted blood withdrawn. The thickness of the sac and the mucous character of its lining immediately showed that we had to deal with more than a hydrocele for the opening was made in the bowel. This opening was clamped and the wound flushed with a 1-1000 bichloride solution. The constricting ring was sought and divided so that the mass could be readily drawn out of the opening, the only adhesion being a band which was easily broken, attaching the gut to the upper part of the ring. The healthy bowel could now be seen at both the proximal and distal ends of the mass which was 9 inches in length. There was no constriction on the protruding mass by the ring but the circulation would not return, so hot cloths and finally hot water was poured on without any aid in restoring the lost circulation. After prolonged effort, it showing no signs of recovery, I ligated the mesentery, clamped the two portions of healthy gut and excised the nine inches of intestine. An end to end anastomosis was done using cat gut through and through after method of Mayo for the first suture and reinforcing the serous and muscular coats with silk. He made an uneventful recovery, returning to his home in three weeks.

**TUBERCULOSIS APPARENTLY
CURED BY ACCIDENTAL IN-
HALATION OF LIME DUST.**

BY

S. C. BOSTON, M. D.,
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Mr. A., negro, first consulted me 3 years ago with marked symptoms of second stage of tuberculosis; considerable emaciation, night-sweats, hemorrhages, cough, mucopurulent expectoration, etc. I made an unfavorable prognosis of his case in a very few minutes and put him on the ordinary routine of treatment, plenty of pure air, milk, eggs, etc., cod liver oil, pulmonary sedatives and stimulants, never expecting to see patient again, as I did not think that he would last more than three months.

In April last a colored man called at my office and complained of an attack of Grippe. I prescribed for the man and started to open the door to let him out, when he said to me, "I guess Doctor, you don't remember me, do you?" I told him that I did not, he then mentioned his name and the previous call at the office. I was very much surprised, in fact could hardly believe him. He was much stouter and from a general inspection showed none of the previous tuberculous symptoms. Becoming interested I got a history from him which is as follows:

After leaving me, he got gradually worse and becoming discouraged went to Wilmington and consulted several physicians. They all advised him to return to the country. He took the advice and got a job hauling lime. Two weeks after beginning work he stated that he felt better, cough and hemorrhages grew less and in six months disappeared and he rapidly took on weight. He stated that his employer's attention was attracted to the absence of cough and hemorrhage and thought that they had stopped too quickly and advised him to see his physician about it. He did so and was told that the lime had cured him. Patient went further to say, that when he was working in the lime his mouth, nostrils, hair, skin, clothes, etc. were always full of lime dust. This man is still living in this vicinity and I see him every day or so, and he certainly shows little if any evidence of tuberculosis.

Now the part that interested me was the fact that he has not had a hemorrhage or been troubled to any extent with cough since working in the lime. The change of condition of patient is so marked that, while I simply have his word for his history yet it bears so many marks of truthfulness and probability that it is apt to interest one at least.

First. The patient would have nothing to gain and it is hardly probable that he would invent such a history.

Second. The actual change that I saw in the patient myself.

Third. That I have on more than one occasion seen at post-mortems, tuberculous areas, enclosed by lime salts, the disease having been thus arrested.

Fourth. It follows out the general routine of treatment, the giving of hypophosphites of lime, etc., internally, aiming at the same result.

Now I had so much confidence in this man's case, that I ordered a similar line of lime treatment for another tuberculous patient, Irish-American, bad family history, (his father and three brothers, one sister having died of pulmonary tuberculosis) age 40, temperature when I first saw him 102½. Hemorrhages twice, mucopurulent expectoration, night sweats, great emaciation. I ordered him to place some lime dust in bur-lap bag, and lift it, drop on the floor rapidly, then place head inside of bag and take long inhalations. This patient has also improved in every way, gained weight and is working. This patient also had an ischio-rectal abscess which I drained and it became a fistula, which I have not attempted to cure. The question in this case is whether this patient was improved by the free drainage of abscess or by the action of the lime. I will not attempt to say.

But another case, Sam K., negro, age 38, tall spare built man with flat, long

thorax, had for two years a troublesome cough and lost weight rapidly; ordinary cough remedies seemed to have no effect upon the cough. At this time he was working in a deep quarry hole. I told him to quit the quarry hole, and get a job in the Company's mill where they crushed lime stone into fine powder. He did so, and while at work his eyes, nostrils, mouth, ears, etc. would get full of the lime stone dust. Anyone familiar with mills of this character knows how the employees are covered from head to foot with the dust. I mention this knowing that this man's history is at variance with the theory that stone dust causes stone-cutters consumption, but in the former case the dust is in a fine powder, in the latter occasional particles of stone.

This man's condition is improved also. (This case also was diagnosed a tuberculosis.) Now I make no claim of a new discovery, but simply feel that I should report my experiences to the profession in hope that it will encourage investigation along this line.

A MIDDLE EAR ASPIRATOR.

BY

PERCY R. WOOD, M. D.,

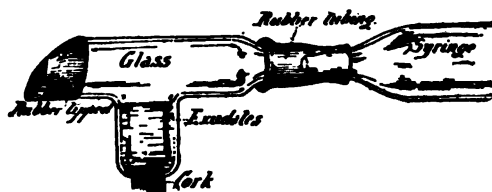
Marshalltown, Iowa.

Middle ear suppuration is now generally conceded to be the result of pyogenic organisms entering the tympanum from contiguous structures or through the great blood and lymph channels of the system.

Many of these organisms are most virulent and of deadly portent. The writer has repeatedly heard Prof. Politzer of Vienna assert that every acute middle ear suppuration left pyogenic exudates in the mastoid which menaced functions and life, and the following described therapy purposes to abort such possibilities. Dench has seen a complete mastoid destroyed and complicated with epidural abscess and thrombosis of the lateral sinus in from 48 to 72 hours by the streptococcus and pneumococcus—organisms most frequently isolated from middle ear exudates.

A crisis is therefore established at every onset of an acute otitis media, and active rather than passive interference is demanded. An immediate and generous incision of the tympanic membrane, in its posterior, inferior quadrant, limits the spread of infection and lessens mechanical and pathological action of the secretions upon membranous structures. Following this procedure aspiration of the pyogenic exudates in sufficient quantities to destroy their preponderance over living tissues is really the paramount issue, merely liberating which does not insure this result. They not infrequently have already invaded the mastoid and having lodged in various recesses develop pathologic foci later.

In order to further the technic as above suggested the writer has devised the "Middle Ear Aspirator" as here illustrated, consisting of a glass tube with a reservoir for exudates. The aural extremity tapers and is tipped with rubber; to the other is attached a large ear syringe.



Middle-ear Aspirator.

When in place the rubber tipped end seals the opening, the piston is drawn gently and retained until the reservoir fills or no further exudates, blood or serum, escape.

This instrument is simple, small and cheap, and can be used by any practitioner.

Its employment draws exudates from remotest cells in the temporal bone (as has been illustrated by the writer on the cadaver,) and thus controls infection. It leeches the deeper parts, relieves congestion, soothes pain, hastens convalescence and has proved a blessing whenever used.

ETIOLOGY AND DIAGNOSIS.

The Diagnosis of Diffuse Peritonitis.¹—

The diagnosis of diffuse peritonitis is often a task of no mean order, says MacDonald. This is usually difficult when it is a question whether a previous infection has extended to the peritoneal cavity. It is particularly difficult in puerperal peritonitis when a woman already severely infected, shows few additional symptoms and small increase of pathognomonic signs.

Rigidity is usually an early and marked symptom and is present in all cases at their inception. It is a local evidence of the irritation of the sensory nerves of the parietal peritoneum and depends upon special chemical conditions. The more intense the toxic action, the greater the rigidity. If it occurs on both sides of the abdomen, the peritonitis will have extended to both sides of the peritoneal cavity. This is borne out by a study of Barth, who found in 117 cases that when the rigidity was on one side, the inflammatory process was also limited to that side. Rigidity is most marked in sudden and rapidly spreading peritonitis, as from appendicitis, and is usually slight or transient in cases following pelvic disease or in puerperal peritonitis. After labor, the relaxed abdominal walls of the puerperal patient do not easily become rigid and intestinal distension readily overcomes it. It is usually present at the inception, however. To the educated hand of the surgeon, rigidity is the most reliable early symptom.

Pain is usually a prominent symptom. The pain of peritonitis is fairly characteristic and is a great aid in the diagnosis of the condition. It depends upon two conditions: First, it is now recognized that most of the pain of peritonitis is due to the accompanying lymphangitis. This, in part, causes the crampy pains of peritonitis—the lymph vessels of the intestines press upon the sensory nerves as the lymphangitis extends. The pain of peritonitis is often not localized, but is sometimes referred, like that of appendicitis, to the epigastrium. This is supposed to be due to the infection in the perilymphatic tissue and lymph glands around the aorta.

The second source of pain is from the exterior of the gut itself and is due to the presence of an irritant causing inflammation of the peritoneum. Movement of the intestine causes severe crampy pains. In addition to the direct irritation and inflammation of the peritoneum, pain is further caused by the rubbing of the inflamed intestinal covering against the parietal peritoneum. The visceral serosa is comparatively free from sensory nerves, while the parietal peritoneum is exceptionally well supplied. It is also recognized that peritonitis may exist in the center of the belly beneath the colon and above the pelvis, amongst the coils of small intestine, for some time and become widespread without causing marked pain.

That acute abdominal symptoms may be caused by lymphangitis alone is shown by a report of Rowland of two cases of operation upon supposed perforation in typhoid fever. Masses of elongated lymphatic glands were found in the mesentery of the gut without any evidence of peritonitis. The pain was intermittent and peristaltic. There was localization of the tenderness with little or no rigidity. Armstrong has reported a similar case in typhoid fever; and McCrae in his study of the pain in typhoid fever cites two cases in which the explanation of the acute symptoms was the enlarged mesenteric glands.

Tenderness on palpation is not usually a marked symptom, unless there has been some effort at repair with the formation of exudate and adhesions. For this reason it is usually slight in puerperal diffuse peritonitis and marked in the less acute forms as pneumococcus and gonococcus peritonitis. The tenderness elicited in gonococcus peritonitis by vaginal examination has already been referred to.

Vomiting is a constant symptom of peritonitis and occurred in all of Barth's 117 cases. It may be divided into two classes: that which occurs at the onset of the disease and is regurgitative and the later and more persistent, bile-stained vomiting, often fecal or hæmorrhagic. It usually recurs and persists as the inflammation spreads over the peritoneum.

The temperature invariably shows a rise and is usually high. In infection with the more virulent organisms the rise is high and intermittent; but in less virulent as

¹Ellice MacDonald, M. D., N. Y. Surg. Gynecology and Obst., Sept. 1908.

gonococcus peritonitis, the temperature is not so high—not rising above 103 degrees in the cases reported here. The pulse rate, however, in gonococcus peritonitis is usually out of proportion to the temperature. There is, however, nothing characteristic about the less virulent peritonitis. The pulse is usually a better indicator of the condition of the patient than is the temperature.

The blood changes of diffuse peritonitis are interesting and instructive. There is usually a diminution in the red cells. This is more marked in puerperal peritonitis and in puerperal infections generally, than in the non-pregnant. The leucocytic count is increased, as it is in all septic conditions. This depends upon the patient's resistance and the virulence of the infection. It may be said, as a general rule, that the leucocyte count is less in the pregnant than in the non-pregnant. The polymorphonuclear leucocytes are usually increased in percentage.

Indications for Nephropexy.¹—Ferguson very tritely says that a kidney should not be insulted by an operation simply because it is extremely floating. He referred to a case of twenty-five year's standing in which the kidneys could be easily made to cross the spinal column, but no operation was ever advised for two reasons: 1, No distress was occasioned, and 2, no important urinary changes ever arose.

He gives the following pathologic indications for operations:

1. Transitory hydronephrosis due to kinking or folding of a ureter and characterized by intermittent renal colic and other less prominent symptoms, such as an irregularity in the quantity and quality of the urine voided.

2. Chronic hydronephrosis with more or less atrophy of kidney tissue, following a more or less permanent obstruction to the urinary flow through the ureter. The kidney may now become fixed away from its normal site.

3. Unilateral interstitial nephritis not infrequently is caused by the kidney floating. The classic symptoms and signs are present, with constant aching and occa-

sionally colic in the region of the wandering organ. ■

4. Acute torsion of the ureter, giving rise to great and constant pain with, of course, enlargement and tenderness of the floating kidney.

5. Acute infection of the hydronephrosis—inflammatory symptoms constitutionally, chill, rapid pulse, fever, colic pyuria, etc.

6. Suppression of urine in a floating kidney with Dietl's crisis bespeaks a condition that should be relieved by operation.

The above mentioned conditions give rise to many local and remote disturbances. In addition to abnormal findings in the urine, e. g., albumin, bile, blood, casts and pus, we often find the patient suffering with painful and frequent micturition; or headache and symptoms of uremia; or gastrointestinal disturbances, dyspepsia, vomiting, abdominal distress, constipation, and even diarrhea.

The Use of Tuberculin.¹—There is no drug in the world says Porcher which can do more good to a patient if properly used, or more harm if improperly used, than tuberculin. There are certain rules in regard to it, and the first of these is "no tuberculin with temperature," and the second is "never to produce a reaction from it if it can be avoided." Of course this implies that the patient must begin with the weakest dose in order to get him accustomed to it without producing any reaction. Pure tuberculin is diluted with a one-half of one per cent carbolic acid with distilled water. The first solution is made by adding nine c. c. of this carbolized water to one c. c. of pure tuberculin. This would contain 100 mg. per c. c. Of this solution one c. c. is added to nine c. c. of the carbolized water, which would contain 10 mg. per c. c., forming solution No. 2. Of this solution one c. c. is added to nine c. c. of the carbolized solution which would contain one mg. per c. c. These solutions can be diluted still further until the dose of 1-10,000 of a mg. is reached which is given to children. A syringe containing exactly one c. c. is used. Injections are given

¹Alexander H. Ferguson, M. D., Chicago, Jour. A. M. A., Aug. 15, 1908, p. 554.

¹W. P. Porcher, M. D., Charleston, S. C. Jour. So. Carolina Med. Assn., Sept., 1908.

1006 (?) daily at first, afterwards every other day. We begin with one Δ mg. for the initial dose and increase it by slow increase until the No. 2 solution is reached, and then if no reaction is produced we increase the strength up to the pure solution. This must also be diluted when it is injected for fear that an embolism may be produced. Of course very much more could be said about tuberculin as to test injections, reactions, etc., as well as the different forms of tuberculin. P. A. Ringer (*Journal A. M. A.*, May 2nd, 1908) in an article on "Tuberculin in Pulmonary Tuberculosis," draws the following conclusions.

"1. Tuberculin is the most valuable adjuvant to fresh air, rest, good food, we possess in the treatment of pulmonary tuberculosis.

"2. Denys' tuberculin appears to be best suited to establish an active antitoxic immunity—the type of immunity capable of doing the greatest good.

"3. Tuberculin is indicated in many types of cases, and in the hands of a competent administrator will do no harm.

"4. Reactions are often overlooked; they are not to be desired, and when frequent or violent are distinctly harmful to the patient.

"5. Dosage should be at first infinitesimal; increase should be gradual. The word haste has no place in tuberculin therapy.

"6. Time and tolerance bring success in the treatment by means of tuberculin.

"7. Tuberculin should never be used save in conjunction with strict hygienic and dietetic measures."

Medical Success.—When a student secures his degree and license to practise, what is the prospect for his future? The late Sir James Paget followed the after histories of 1,000 medical students. Of these 23 achieved distinguished success, 66 considerable success, 507 fair success, 124 very limited success, 41 died while students, 87 died within 12 years of commencing practice, 56 failed entirely in the profession, and 96 abandoned it for some other calling. At a later date Dr. Squire Sprigge made a somewhat similar study of 250 students, and with somewhat similar results.—*Edin. Med. Journal*.

TREATMENT.

The Treatment of Varicose Ulcer.¹

In the great majority of cases of varicose ulcer, improvement in the circulation is urgently necessary and Adams recommends whenever possible that the patient should be kept in the recumbent position with the limb elevated, but when circumstances do not permit of such, the veins can be supported in various ways. Elastic stockings are excellent, but expensive and not durable. Bandages of rubber cloth or woven bandages rendered elastic by the character of the mesh, or Martin's plain rubber bandage may be employed. The latter is put on smoothly but not tightly, for in walking the leg swells, so that a uniform pressure is established. As the rubber prevents evaporation, it acts like a wet compress stimulating the granulations, but often producing eczema around the ulcer. The bandage should be washed carefully at night with soap and cold water, and must be kept clean. In one patient a firm elastic stocking of vulcanized rubber will give the greatest ease and comfort, while in another the irritation caused by such a bandage will prove unsupportable. The cotton web bandage in such cases is a good substitute and is found very serviceable. The essential feature of ambulatory treatment is a good bandage to prevent congestion, and, to my mind, Unna's bandage is the ideal one. The paste necessary for the bandage is prepared as follows: First dissolve four parts of the best gelatin in ten parts of water by means of a hot water bath. While the fluid is hot add ten parts of glycerin and four parts of powdered white oxide of zinc; stir energetically until the mixture is cold. Always melt the paste before using by placing the receptacle in a hot water bath, as it must be applied while hot, solidifying on cooling and resembling rubber. The limb should be carefully cleansed with soap and water, then alcohol, and must be thoroughly dried before the paste can be used. After heating, it is brushed on from knee to foot and a gauze bandage is applied, cutting it frequently instead of reversing, in order to prevent

¹Edward Adams, M. D., New York, N. Y. *Med. Jour.*, Sept. 26, 1908, p. 600.

wrinkles; then another layer of paste and another layer of bandage, until a support of several thicknesses is obtained. If the ulcer is secreting freely, a window can be provided or the dressing changed. After the last application of the paste some nonabsorbent cotton can be applied, giving the bandage a mole skin finish; or some talcum powder can be used, giving the appearance of a plaster of Paris dressing. The bandage can be worn anywhere from two to eight weeks.

The Treatment of Acidosis.¹—It is not yet possible to adopt active measures to stop the erroneous metabolism which gives rise to acetonaemia, because there is still doubt as to where the metabolic fault lies. Something can be done, however, to prevent the occurrence of acidosis, and much can be accomplished in counteracting the effects of acidosis when it has occurred. The prophylactic measures in diabetes are well known—avoidance of too sudden a curtailment of the carbohydrate food, and of undue physical fatigue or mental overstrain. Starvation being a cause of acetonaemia, it is clearly unwise to go on starving gastric and other cases which have acetone in their urines, and so on.

The curative measures resolve themselves into the administration of alkalis in large doses, to neutralise the acid products in the blood. Neither the blood nor the urine become unduly acid when acidosis is taking place—a matter which may seem paradoxical; but in order to neutralise the diacetic and B-oxybutyric and other acids as they are formed, a considerable quantity of the nitrogen which should appear in the urine as urea becomes excreted in the form of combined ammonia. If it were not so difficult to estimate the latter, a very fair measure of the degree of acidosis occurring in any given patient would be afforded by the amount of this combined ammonia. Alkalis are not given, therefore, with the idea of making the blood either less acid or more alkaline; they are given in order to relieve the strain upon the patient's powers of ammonia-compensation for acidosis. The giving of alkalis has produced wonderfully good results in some cases. One has seen lives saved by gastric lavage with

weak sodium bicarbonate solution for uncontrollable vomiting after long operations under anaesthetics. One has seen diabetic patients brought round from coma, and others saved from threatening coma, when big doses of sodium bicarbonate were given. Much of the good attributable to bismuth in gastric cases may be due to the salt most frequently prescribed being the oxycarbonate. It is clear that different conditions require the alkali in different quantities. For diabetes with impending coma as much as 100 grams of sodium bicarbonate per diem has been given by the mouth. In urgent cases the hypodermic method may be resorted to, the strength employed being 1 of bicarbonate of soda in 300 of water. It may be given rectally when oral administration is not tolerated. The main thing is to recognize acetonaemia when it is present, by testing for acetonaemia as a routine measure.

The Treatment of Gonorrhea.¹—Christian in outlining his treatment of gonorrhea, says that two solutions are ordered—one containing potass, permang. 1:8,000, the other a solution of some one of the silver salts. The patient is instructed to gently wash out the anterior urethra with an ordinary hand syringe full of the permanganate solution, repeating the process six times. After so doing one syringeful of the silver solution is injected into the urethra and held in for ten minutes. This treatment should be employed three times daily for the first four days, at which time the strength of the permanganate solution should be increased to 1:4,000. In the stationary stage of the disease—i. e., about the end of the second week—the use of the permanganate solution can be discontinued, the patient being instructed to use the silver solution night and morning, and twice during the day one syringeful of the following:—

R Bismuth subcarb. 3i.
Colorless hydrastis ʒss.
Boroglyceride 3ij.
Aq. dest., q. s. ʒiv.

In cases where the mucous discharge persists after four weeks, the use of the following formula, two or three times daily,

¹H. M. Christian, M. D., Phila. Encyclopedia of Med., Oct., 1908, p. 476.

¹The Hospital, Oct. 3, 1908.

will eventually bring about a cure in most cases:—

℞ Zinc sulph.,

Pulverized alum, of eachgr. xij

Liq. hydrastis, colorless℥ss.

Aq. dest., q. s.℥iv.

Ordinarily in cases where there is little or no urinary frequency and only the two-glass test reveals the presence of a total urethritis, local treatment in the form of irrigations or deep instillations should be early employed. In nervous patients where the cut-off muscle fails to relax, or where the distention of the urethra produced by irrigation from the meatus causes considerable pain, it is much better to irrigate the deep urethra by means of a small caliber soft-rubber catheter. The most satisfactory line of treatment employed by the writer for some time consists in daily irrigations of the deep urethra with solutions of potass. permang. 1:6,000, followed by instillations with a Keyes-Ultzman syringe of a silver solution, which should be held in the urethra as long as possible. This line of treatment should be employed every day if possible, until such time as the urinary frequency diminishes and the second portion of urine passed becomes clear. The use of hand injections by the patient should be discontinued temporarily during the period in which the posterior urethra is involved. This is a most important point and one very often overlooked. When the two-glass test shows that the posterior urethra is free from disease, any of the astringent hand injections mentioned above can be employed.

Orchitis.—This application to the testicle may be made with great relief during the first week of inflammation:—

℞ Guaiacol, ℥iiss.

Lanolin, ℥ij.

Mix well, and rub in gently twice daily; envelop the testicle in non-absorbent cotton and suspend. After a week it is better to change to:—

℞ Mercurial ointment,

Belladonna ointment,

Ichthyol,

Lanolin, of each, ℥j.

Make an ointment and apply three times a day, using a suspensory bandage not very tightly applied.—*American Journal of Clinical Medicine.*

DIETETICS AND HYGIENE.

The Eyes of School Children.¹—Carhart thus concludes his exceedingly valuable paper on the Hygiene of the Eye in School Children.

1. The increase during late years in the number of children wearing glasses is due not to an increase in the number of weak or diseased eyes, so much as to the greater strain on the function of vision necessitated by our more extended use of the eyes for close work in the complex civilization of the present day.

2. The normal child is born hypermetropic and without astigmatism. The myopic child is either defective from birth or has acquired myopia from the stress of eyestrain through the "turnstile of astigmatism." Astigmatism is not congenital, but is practically always acquired in the normal child during the early years of life by excessive strain on the muscles of accommodation.

3. Kindergarten and primary work should be so arranged as to avoid strain on the muscles of accommodation of the eye, in the plastic years of childhood. Hence, sewing and all weaving exercises should be limited in amount, if not absolutely eliminated.

4. Systematic study should be begun only when the delicate and soft tissues of the child's eyes have attained sufficient formation to resist distortion on moderate use of the accommodation. This means, that prolonged close work should not be allowed until the age of 10 or over. A child beginning systematic study at that age will, with suitable care, be able at 16 or 18 to acquire all the knowledge possible to its more precocious companion, and will have the inestimable advantages of normal eyes and healthy physique.

5. No young child should be encouraged to compete with its companions for prizes. Mental and ocular overstrain are the inevitable results of such educational monstrosities. In the primary schools especially there should be no grading of the children.

6. A child incapable of the prolonged use of the eyes at the proper age should not be classed as culpably lazy. In the major-

¹W. M. Carhart, M. D., New York, *Am. Jour. of Obst.*, July, 1908.

ity of cases there will be found uncorrected refractive error.

7. Inability to concentrate the mental attention, and deficient powers of observation are often caused by bad visual memory resulting from eyestrain.

8. The symptoms and physical signs of eyestrain in children can be easily recognized, and there is no more brilliant success in medicine than that which follows the correction in children of refractive overstrain.

Data for Infant Feeding.¹— Milligan, in his interesting paper, concludes that the data on which we have to depend in prescribing food for children are as follows: The proportion of animal to vegetable food should be as 1:22 to 2 and the proportion of nitrogenous foods to non-nitrogenous is as 1:4 or 1:5, and of the protein given at least 50 per cent. should be of animal origin, because it is more easily digested. The caloric demand of the individual is in proportion to each kilogram of weight or approximately to the age, and to meet this caloric demand certain proportions and quantities of the nutrient elements are required. One gram of fat produces 9.3 calories, 1 gram of carbohydrates produces 4.1 calories, 1 gram of proteid produces 4.1 calories, that is, each gram of proteid and carbohydrates has an equal caloric value, while fat has nearly a double caloric value. For instance, a baby 9 months old should weigh about seventeen pounds, or 7.7 kilograms. The average infant in health needs 100 calories to each kilogram of weight; that is, the 9-months baby should demand 770 calories daily or, in terms of food, mother's milk has a caloric value of 650 per liter, cow's milk has practically the same value. By giving the child one and one-sixth liters of milk his demands would be satisfied, but we know by experience that at nine months a child should be fed on other nutrients than the form of those found in milk to produce the best development; that is, less than a liter of milk should be given and the diet broadened by the addition of other foods, such as gruels made from oatmeal, barley or granam. To these can be added salt,

a little cane sugar and cream, both to make them more palatable and of higher food value.

Flies.—The Board of Health of New York City has distributed cards among householders, hotel and restaurant proprietors, with the following rules and comments:

"Keep the flies away from the sick, especially those ill with contagious diseases. Kill every fly that strays into the sick room. His body is covered with disease germs.

"Do not allow decaying material of any sort to accumulate on or near your premises.

"All refuse which tends in any way to fermentation, such as bedding, straw, paper waste and vegetable matter, should be disposed of or covered with lime or kerosene oil.

"Keep all receptacles for garbage carefully covered and the cans cleaned or sprinkled with lime or oil.

"Keep all stable manure in vault or pit screened or sprinkled with lime, kerosene or other cheap preparation.

"See that your sewerage system is in good order; that it does not leak and is up to date and is not exposed to flies.

"Pour kerosene into the drains.

"Cover food after a meal; burn or bury table refuse.

"Screen all food exposed for sale.

"Screen all windows and doors, especially the kitchen and dining room.

"Burn pyrethrum powder in the house to kill the flies.

"Don't forget that if you see flies their breeding place is nearby filth. It may be behind the door, under the table or in the cuspidor. If there is no dirt and filth there will be no flies.

"If there is a nuisance in the neighborhood write at once to the Health Department."

Alcoholism Among Women.—According to Dr. Norman Kerr, in 1894 the proportion of female inebriety in England had increased greatly in the recent years preceding 1894. He asserts that prison experience shows a distinct increase of drinking to excess among women. According to the annual death rates from alcoholism in England and Wales, per million living,

¹J. P. Milligan, M. D., Illinois Med. Jour., Sept., 1908.

from the year 1875 to 1904, the mortality due to inebriety is distinctly increasing. The average for every five years from 1875 to 1904 was: 1875 to 1879, 25 deaths per million living; 1880 to 1884, 29 deaths per million; 1885 to 1889, 36 deaths; 1890 to 1894, 50 deaths; 1895 to 1899, 58 deaths; 1900 to 1904, 71 deaths. In studying these figures it seems as if there can be no reasonable doubt that alcoholism is increasing among the women in England and Wales, although some allowance should probably be made for the more accurate diagnosis of recent years. Dr. Scott, quoted by Newman, believes that alcoholism is increasing among the women in Scotland.—*Graham*.

Infant Insurance and Infant Mortality.—Infant life insurance and burial clubs cause the death by neglect of many; statistics prove that a much greater number of children insured and in burial clubs die than of those children in the same cities and towns living under exactly similar conditions. Coroners' inquests should be rigid and impartial, and if there is any question or possibility of infanticide, the case should be thoroughly investigated and proper punishment imposed on the guilty. Of 864 children dying under one week of age in Philadelphia, inquests showed, according to Parry, that 210 died from "unknown causes," 293 from "asphyxia," 94 "still born," 62 from "exposure and neglect" and twenty-two from "want of medical attention." In these cases the coroner's physician believed that the majority of those which he examined were murdered.—*Graham*.

Alcohol and Infant Mortality.—Alcohol is a distinct poison to children, but the number of deaths caused by the giving of alcohol direct in any form to children is certainly very small in the United States. It has, however, been clearly shown that suffocation in bed and overlaying is twice as common on Saturday as any other night in the week; and the prevalence of drinking among the poor on that night is proverbial. An alcoholic mother rarely supplies her baby with a good breast-milk, and what is perhaps more important is the fact that the milk from such a mother may

even contain alcohol. Alcoholism among women is perhaps increasing in America, but it is surely less common than in England.—*Graham*.

NOTES ON MODERN PHARMACEUTICAL REMEDIES.

(Continued.)

PAUTAUBERGE'S SOLUTION.

Description.—A clear amber colored solution consisting of creosote and chlorophosphate of lime in a glyco-alcoholic menstruum to which is added a bitter tonic.

Formula.—Each tablespoonful contains creosote 2 minims, chloro-phosphate of lime 8 grains.

Action.—This preparation exhibits the tonic reconstructive and antiseptic action peculiar to creosote with the added reconstructive action of the lime salt. It does not cause the gastric irritation, eructations and nausea which result from the use of creosote in its usual forms.

Indications.—Pautauberge's Solution of creosote with the chloro-phosphate of lime is extensively used and recommended by French physicians in the treatment of pulmonary tuberculosis, chronic bronchitis, emphysema, asthma, tuberculous infections in general, chronic intestinal diseases and wherever creosote would be indicated.

Dose.—Three or four tablespoonfuls a day for adults.

Three or four dessertspoonfuls a day for children from 12 to 15 years.

Two or three dessertspoonfuls a day for children from 5 to 15 years.

Two or four teaspoonfuls a day for children under 5 years.

The addition of two tablespoonfuls of coffee improves the taste. Pautauberge's Solution may also be taken in beer or stout.

Special Considerations.—The particular quality of the creosote used, its freedom from impurities, its comparative palatability, the absence of gastric or intestinal irritation even on long administration and corresponding therapeutic benefits.

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American Agents.—Geo. J. Wallau, Inc., 2 & 4 Cliff St., New York City.

PEPTO-MANGAN (GUDE).

Description.—A clear, limpid, reddish-brown fluid, neutral in reaction and of pleasant taste and odor.

Formula.—Each half ounce contains $\frac{3}{4}$ gr. iron and $\frac{1}{4}$ gr. manganese, in intimate organic combination with peptones, alcohol content, 16%.

Action.—Pepto-Mangan (Gude) is a true hematic, increasing both the number of red corpuscles and percentage of hemoglobin. It is tonic in its effect and promotes bodily nutrition by improving the quality and increasing the quantity of the working elements of the blood.

Indications.—Pepto-Mangan (Gude) has been recommended in all forms of malnutrition resulting from, or attended by anemia. Also in chlorosis; the anemias of adolescence; convalescence from acute diseases; prolonged lactation; after severe hemorrhages, and whenever a hematopoietic and reconstructive is needed.

Dosage.—One tablespoonful, three times a day, after each meal, in water, milk, sherry, or other non-acid medium.

Special Considerations.—Pepto-Mangan (Gude) was one of the earliest products to demonstrate the value of organic combinations of iron and manganese. It is stable, palatable, neutral in reaction, contains no free iron, and, as a consequence, is attended by none of the objectionable features of inorganic iron, such as gastro-intestinal irritation, constipation, arrest of gastro-intestinal secretions, etc. It is uniform in quality and strength, and it is

claimed that it can be administered to the youngest or most debilitated patient with minimum interference with gastric or intestinal functions. It does not discolor or injure the teeth.

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American Agents.—M. J. Breitenbach Co., New York, U. S. A.

SANTYL (KNOLL.)

Description.—Santyl is the neutral salicylic ester of santalol, and in appearance is a yellowish oil of a faint balsamic, but pleasant odor and taste. It boils at 250 degrees C. (482 degrees F.) at a pressure of 20 mm. of mercury. It is not miscible with water but mixes with alcohol in about the proportion of one to ten. It is incompatible with the alkalies.

Formula.—Santyl is represented by this formula: $C_{15}H_{11}O_4$ ($C_{15}H_{11}O_4$). It contains approximately 40 per cent. salicylic acid and 60 per cent. santalol.

Action.—This product presents the characteristic soothing antiseptic action of sandalwood oil without the usual irritating effect on the gastro-intestinal tract and kidneys. It is not acted upon in the stomach, consequently does not give rise to unpleasant eructations. It undergoes chemical dissociation in the intestines, breaking up slowly into salicylic acid and santalol. Santyl is said to be superior to pure sandalwood oil as an anesthetic and disinfectant owing to the presence of the salicylic-acid

radical. It is claimed for Santyl that its administration in gonorrhea is followed by prompt relief of pain, distress, frequent urination and tenesmus. Also that discharge is decreased, the inflammation is soon controlled, and the turbid urine is promptly cleared up.

Uses.—Santyl is recommended in connection with local treatment in acute gonorrhea and its complications, particularly posterior urethritis, chronic gonorrhea with acute exacerbations, cystitis (in combination with an efficient urinary antiseptic) epididymitis, prostatitis, and posterior gonorrheic disturbances generally as an adjunct to local treatment. More recently Santyl has also been recommended for use in gynaecological practice, where it is indicated as an anesthetic to the irritable bladder, in the dysuria and vesical tenesmus, no matter whether due to an affection of the vesical membrane or purely reflex in character.

Dose.—Santyl may be taken clear on lump sugar in doses of 20 drops three times a day after meals, or in 7 drop capsules, two of which may be taken 3 or 4 times a day.

Special Considerations.—Freedom from usual irritating action of sandalwood oil on the digestive tract and kidneys, freedom from unpleasant taste, and improved therapeutic action.

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American Agents.—Knoll & Co., New York, N. Y.

ZINC PEROXIDE.

Description.—Zinc Peroxide is a yellowish white powder, insoluble in water, but soluble in any acid medium.

Formula. Chemically $Zn O_2$, Zinc Peroxide is really a superoxidized zinc oxide. The powder as marketed is a mixture of zinc peroxide (50%) and zinc oxide or hydrate. It is claimed that this powder will liberate about 70 c.c. nascent oxygen to each gram of powder. While this is a variable proportion, owing to decomposition changes due to moisture, etc., it is apparent that from 8 to 10% of active oxygen is a fair claim.

Action.—When brought into contact with acids, acid secretions, pus, blood, wound secretions, perspiration, moist organic material and such substances zinc peroxide gradually undergoes reduction to zinc oxide with the liberation of one atom of oxygen. The well known germicidal and bacteriolytic action of nascent oxygen and the sedative, astringent and healing properties of zinc oxide indicate the action to be expected from the use of zinc peroxide.

Uses.—Zinc peroxide has been recommended as an antiseptic surgical dusting powder in the treatment of all wounds and infected surfaces. Also in the treatment of eczema, psoriasis, dermatitis, ulcers and burns. As an addition to ointments it has proven superior to zinc oxide for obvious reasons. It has been found of especial value as a deodorant in all forms of bromidrosis. Incorporated with surgical gauzes it has likewise proven useful. The following formula is suggested wherever a dusting powder is indicated in the treatment of skin diseases:

R Sulphur precip	3i
Pulv. Calaminæ	3ss
Amyli	3i
Zinc Peroxide	5vss

Zinc peroxide is being extensively used in toilet salves, creams and talcum powders.

Special Considerations.—Zinc peroxide is more stable than the other peroxide salts.

It is odorless, non-toxic, non-irritating and as it is not affected by ordinary temperatures (100 to 150° C.) it can be sterilized before surgical use, if desired.

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MISCELLANEOUS TOPICS.

The Cost of Tuberculosis in the United States and its Reduction.¹—This paper, by Professor Irving Fisher, summarized the costs of tuberculosis in lives, disability, unhappiness, and money.

The death rate from tuberculosis in all its forms in the United States is estimated at 164 per 100,000 of population, and the number of deaths in 1906 at 138,000. At this rate of those now living in the United States 5,000,000 people will die of tuberculosis. The average age at death for males is 37.6 years; for females, 33.4 years. The "expectation of life" lost (though estimated on a specially high mortality rate) is at least 24 years, of which at least 17 fall in the working period. The average period of disability preceding death from tuberculosis exceeds three years, of which the latter half is a period of total disability.

The money cost of tuberculosis, including capitalized earning power lost by death, exceeds \$8,000 per death. The total cost in the United States exceeds \$1,100,000,000 per annum. Of this cost about two-fifths, or over \$440,000,000 per annum, falls on others than the consumptive. An effort to reduce the mortality by one-fourth would

be worth, if necessary, an investment of \$5,500,000,000. The cost of treating patients at sanatoria is repaid many times over in lengthened working lives.

The erection of isolation hospitals for incurables is probably the most profitable method at present of reducing the cost of tuberculosis.

The Value of Sanatorium Treatment.¹—

Sanatoriums are essential to the successful treatment of pulmonary tuberculosis on a large scale, and are essential to any scheme directed toward the eradication of the disease, provided they* are used intelligently as an important link in a properly co-ordinated system of attack.

The value of sanatoriums does not meet with universal acceptance for several reasons.

1. The majority of sanatoriums are inefficient.

2. Sanatoriums have been regarded by some as sufficient in themselves and as certain to cure nearly every case of consumption.

3. The erection and the maintenance of sanatoriums costs too much.

4. It is held by many that it is impossible to provide the necessary funds to pay for the treatment of the majority of sufferers.

5. The difficulty of making arrangements for maintaining the family when the bread-winner is at the sanatorium and in finding suitable work for him on his return to his home.

The best proof of the value of sanatorium treatment is obtained from a study of the results of the treatment of consumption before and after the adoption of sanatorium methods.

The value of sanatorium methods is greatly increased by the use of tuberculin.

Sanatorium treatment is of great value from an educational point of view. The value of sanatorium treatment has been enhanced by the recent additions to our knowledge, and more especially with regard to auto-inoculation and the response of the body to tuberculin.

¹Read at the International Congress of Tuberculosis.

¹Arthur Latham, M. D., London. Read before the International Congress of Tuberculosis.

The Food Question.¹—It is entertaining as well as instructive, says the *Medical Record* to read the opinions of scientific men as to the value of certain diets. Scarcely has Sir James Crichton-Browne demolished—to his own satisfaction, at least—in eloquent phrases the fads of such men as Fletcher who urges extreme mastication, and others who have advised that much less food in general should be eaten than is ordinarily the case, and little or no meat, than among others Major Blackham propounds an almost opposite view. Sir James Crichton-Browne contended that all who are able should eat generously and take plenty of meat, while the followers of Chittenden hold that very much less, indeed scarcely any, meat should be eaten and that diet in every respect should be more sparing.

The food question is largely one of mode of life and the individual. If a man works at a desk indoors for the greater part of the day he certainly does not need a large amount of food or much meat. But if he is doing manual labor in the open air, he can eat and digest easily a considerable quantity of meat, and experience does not go to show that such a diet harms him. Therefore it would appear reasonable to argue that a soldier on active duty benefits by a goodly proportion of meat in his rations. With Major Blackham's conclusions that a varied diet is the best for a soldier, as indeed it is for anyone, there can, of course, be no grounds for dispute.

A little wisp of cotton fastened to the skin with collodion makes an excellent dressing for a boil. Any discharge is absorbed by the cotton and irritation from rubbing of the clothing guarded against.—*Int. Journal of Surgery.*

In cases of intractable vomiting of pregnancy it is important never to omit a thorough vaginal examination. It is not uncommon for such patients to be treated for long periods with gastric sedatives until they have reached a marked degree of exhaustion. It is equally important in these cases to determine the condition of the kidneys, as shown by urinary examination.—*Int. Journal of Surgery.*

¹Ed. 10, 1908.

NEWS ITEMS.

Officers of American Dermatological Association.—At the meeting of the American Dermatological Association, held at Annapolis and Baltimore, Sept. 24, 25 and 26, 1908, the following officers were elected for the ensuing year: President, Dr. William Thomas Gilchrist, of Baltimore; Vice-President, Dr. William Allen Pusey, of Chicago; Secretary and Treasurer, Dr. Grover William Wende, of Buffalo. The next meeting of the association is to be held in Philadelphia in May or June, 1909.

American Electro-Therapeutic Association.—At the eighteenth annual meeting of this Association, held Sept. 22-24, in New York City, the following officers were elected: President, Dr. Edward C. Titus, of New York; Vice-Presidents, Dr. William D. McFee, of Haverhill, Mass., and Dr. Thomas D. Crothers, of Hartford, Conn.; Secretary, Dr. J. W. Travell, of New York; Treasurer, Dr. Richard Joseph Nunn, of Savannah, Ga.

Death of Dr. Edebohls.—Dr. George Michael Edebohls, a member of the faculty of the New York Post-Graduate Medical School, died at the Hotel Colonial, Eighty-first street and Columbus avenue. Dr. Edebohls was born in New York in 1853. He was graduated from St. John's College of Physicians and Surgeons in 1875. He was well known as a consulting surgeon and writer on medical topics. Since 1893 he has been a professor in the New York Post-Graduate Medical School. He was the author of "The Surgical Treatment of Bright's Disease."

Prizes of the Tuberculosis Congress.—The International Congress on Tuberculosis, which recently occurred in Washington, gave New York the gold medal for the best State exhibit and New York City the gold medal for the most efficient laws and ordinances governing tuberculosis. The Committee on Tuberculosis of the New York Charity Organization Society shared with the Women's National Health Association of Ireland a \$1,000 prize. The Manhattan Tuberculosis Dispensary of the Health Department, the State Charities Aid Association, the School Farm League and the Sea Breeze Hospital were other local medalists.

The Mississippi Valley Medical Association.—The officers of the ensuing year just elected are: Dr. J. A. Witherspoon, the editor of the *Southern Medical Journal*, Nashville, President; First Vice-President, Dr. Louis Frank, Louisville; Second Vice-President, Dr. Albert E. Sterne, Indianapolis. Dr. Henry Enos Tuley, of Louisville, and Dr. S. C. Stanton, of Chicago, were re-elected Secretary and Treasurer respectively. St. Louis was designated the next meeting place.

American Medicine

FRANK CLARK LEWIS, M. D., *Managing Editor.*

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Water pollution and sewage disposal are two allied topics which are bound to loom up large in the immediate future, as the present state of affairs is intolerable. Sixty or seventy years ago we had innumerable clean streams suitable for water supplies for cities, but the old methods of disposal of excreta were so bad that cities could not grow. Then, with that short-sightedness which has been our besetting sin, we calmly poured the sewage into the drinking water. We have but recently realized the alarming fact that we have little drinking water left. Nevertheless, there are a few belated minds still convinced that water courses being natural surface drains are also natural sewers, and these few men will long continue to oppose decency, although the educative literature on the subject is enough to convince an imbecile.

Water filtration is already a necessity. The present trend of opinion among all sanitarians seems to be in the direction of building huge filters in every city, town or village. New York City is discussing plans involving the expenditure of untold millions. This is all deplorable, for filters though necessary by reason of our present habits are really intolerable. Sanitary thought should be inverted, and all discus-

sions directed to the means by which every community shall dispose of its own filth and not throw it on some one else. It is said that we have God's own country, man's own back yard and the devil's own cess pool, but our sewage system is that of the Prince of Devils—the quintessence of cruel disregard of the rights of others. It is high time we start a crusade for natural water instead of filtered sewage.

Large cities are now deprived of safe water. Populations congregate where industries and commerce require them and as a rule the places are far from good water, so far as to prohibit conveyance except at appalling cost. Competent men have decided that in time New York City must pump its water from the Hudson and take the sewage of the up-stream cities. Unless these communities can be compelled to remove dangers from the sewage before they pour it into the river, New York City must do it by filters which will cost many times as much as sewage disposal plants, and even with the best of filters the resulting fluid is still unsafe diluted sewage. The expense should fall on the communities which are committing the nuisance—the up-stream cities—and courts will no doubt so decide, for that seems to be the drift of the public opinion which makes the law.

A double water supply is the present need, for it will take a long time to change the sewer systems of the country. To a certain extent there is a double supply already in existence, for many people never think of drinking spigot water. Private companies are supplying bottled water from distant places and we have reverted to primitive conditions of by-gone civilizations. On account of the criminal manner in which a few of these companies have supplied unclean water in the bottles, the demand has been made that they be driven out of business by making the supplying of such water a public service, introducing it into every house for drinking and bathing purposes, but at such high rates as will prevent its use for watering gardens and streets, flushing sewers, extinguishing fires or for manufactures. For all such purposes the filtered river water will suffice until the rivers can be made as clean as they were when Providence gave them to us. Unfiltered water is of course unsuitable as we would merely be sprinkling our streets with sewage, and the very dust would be worse than it is now. In coast cities, seawater has even been suggested for many purposes, now consuming the valuable drinking water.

The separate sewer system is also receiving renewed attention and bids fair to be adopted ultimately. Laws prohibiting the discharge of untreated sewage into streams are necessitating the construction of modern disposal plants and these cannot take the rain water which must be discharged by separate pipes into the natural drainage courses. In the course of time this system would purify all our rivers to a marked degree—perhaps sufficiently to permit of their use as drinking water,

though it would be a long time in the future. Nevertheless, we seem to be drifting to the time when the double systems of water supply and waste water disposal will be necessary if we are to continue to multiply in population and survive in the dense masses inevitable. We trust that the matter will be discussed more by the lay public who are the ones who must ultimately adopt the plan.

One Form of Meddlesome Surgery. In his devotion to the doctrines of surgical cleanliness a good deal of harm is sometimes done by the overzealous surgeon. In his efforts to remove every vestige of discharge from a wound he often interferes with the reparative process. In the minds of some the appearance of pus is a confession of imperfect cleanliness, forgetful of the fact that it may be an evidence of nature's lavishness in pouring out more cellular material than is needed to effect repair. Dr. Robert T. Morris, sometime ago in an article in the *Medical Record*, graphically pointed out the harm that may result from gross cleanliness. For instance, in the case of an open incised wound which is healing by granulation the strenuous removal of pus from its surface may disarrange the delicate epithelial cells, delay repair, and lead to an undue amount of connective tissue formation. If anything be used at all gentle washing with physiological salt solution is alone permissible. It is also necessary to abstain from placing gauze directly upon such a wound, and much wiser to interpose some protecting medium which will prevent drying and sticking with the inevitable injury to the new cells when such dressings are removed.

Another example cited by Dr. Morris was the healing of a fistulous tract. If in such

a case vigorous efforts are made to remove every particle of discharge by forcible injections, the proliferating new connective tissue cells are damaged and proper repair prevented.

Still another striking illustration is afforded by cases of extensive peritoneal infection, as from a perforated appendicitis. If in such conditions too much time is wasted in cleansing the peritoneum and no allowance is made for the vital resistance of this membrane and its inherent reparative power, the chances of recovery are greatly decreased.

What Virchow has called "the battle of the cells" against bacilli is constantly going on in surgical lesions, and to prevent the victory of the microbe everything should be done to reinforce the vitality of the organism, and every care should be taken to avoid damage to the leucocytes, which are its natural and most dependable defenders.

The increase of medical articles in lay publications presents questions that must be carefully considered sooner or later by the county societies. Within a year or two the lay press has been flooded with articles written by medical men. In the great majority of instances these have had the laudable purpose of enlightening the people in regard to hygienic and sanitary matters. Thus considered these contributions cannot be too highly commended and their publication is certainly to be encouraged. But there is another type—those that are so thinly veiled that the underlying motive is at once apparent. This, in plain language is self advertisement and articles written and published with this object cannot be too severely condemned. They are not only unprofessional and contrary to every ethical

principle, but they are positively harmful in that in nearly every instance they either convey misinformation, or give data that lay readers cannot properly grasp. False impressions and ideas are created, and without the broader medical knowledge that leads to intelligent discrimination, the lay reader arrives at conclusions that are a strange conglomeration of fact and fancy. It is the old story of a "little learning" which patients so proudly parade at every opportunity, but which, as every physician can testify, forms one of the greatest obstacles to successful medical practice.

The medical man, therefore, who in his short sighted efforts to attract attention to himself and his work, contributes these "write-ups" to the newspapers, deserves nothing but censure. He is unworthy of respect and will soon find himself *persona non grata* among decent, earnest physicians.

The recent magazine articles of Dr. Woods Hutchinson exemplify the kind of communications that medical writers should strive to furnish for lay perusal. In every way they are adapted to the dissemination of the right kind of knowledge and well calculated to aid and not interfere with successful medical practice. Not only are these articles by Dr. Hutchinson beautifully written, but they are doing a true missionary work in furthering the gospel of modern hygiene and sanitation. Such contributions reflect honor on their author, but entirely because of what they do for the civilized world—not for their advertising value.

Newspaper medicine, may therefore do a great deal of good or a great deal of harm. When it gives the people truthful information for their welfare, it is good, but when it is prepared and published solely

in the interests of the author or some other individual it is all wrong!

An article in the *Sunday World* (Nov. 1, 1908), purporting to be by Dr. C. H. Duncan of New York City is one of the most flagrant of recent contributions to lay publications. The article is highly technical, refers to a special disease, elucidates (?) a special treatment, and *mirabile dictu*, concludes with a case report! In a medical journal, Dr. Duncan's paper would have been eminently fitting and doubtless a valuable contribution to the subject. But appearing in a newspaper it is most reprehensible and permits of only the most ugly and unpleasant deductions. It is impossible to tell how far Dr. Duncan was responsible for the appearance of this article, for newspapers have a way sometimes of placing innocent medical men in embarrassing positions, but the fact that the article is a signed one, would make it appear that it was published with the full knowledge and consent of the ostensible writer. If this is the case we blush for his immodesty and deplore the judgment that would permit the publication of an article of this character in a lay journal. As the article stands, it is a sad prostitution of evident talents, a flagrant violation of the established customs of the profession, and entirely incompatible with the truest principles of medical ethics. The way in which the names of Dr. Bodine and Dr. Prichard are dragged in, is most unfortunate and cannot fail to annoy these gentlemen who are medical men of unimpeachable integrity and standing. The whole affair is regrettable, for aside from the suspicion it engenders, it gives authority to a treatment, that without much greater and far reaching investigations is unwarranted and unjust-

tifiable. Unfortunately the lay readers who peruse the article will not appreciate this all important fact.

The physiologic value of flavors has been frequently commented upon, and the subject deserves the widest publicity to check the growing tendency of a certain class of dietetists to consider that the only useful ingredients in foods are the tissue building and energy producing chemical compounds. Foods must possess much more than carbon and nitrogen to make them wholesome, and the laboratory takes no account of such intangible things as flavor and bouquet. It is now asserted that the high prices paid for certain pleasing foods is really money well spent, even if the "nutritive" value is less than cheaper, more tasteless things. The craving for these dainties is an expression of a natural need, and health suffers if they are unattainable. Even savages have their occasional "spreads," the civilized "banquet" is as old as civilization, and both seem to satisfy a wholesome craving.

The economy of expensive foods is explained by the fact that digestion, at least in man, is dependent upon flavors, without which it is so defective that we do not obtain the good of the food we swallow. As far as experiments go, they substantiate these assertions, for the sight and smell of pleasing food starts the flow of digestive fluids, while disagreeable odors and sights stop it. Delicatessen, then, would seem to be staples, for they are necessary. The talk of being able to subsist on a few cents a day is simply nonsense and leads to deterioration of health. What seems to be extravagance in food purchases may be

wholesome instinct. The high cost of living is partly due to the cost of the flavors we need. We commend these ideas to our worthy dietetic economists. Laymen may not be so foolish as the physiologists themselves.

The inefficiency of plain foods must be a startling shock to all who have so strenuously advocated the simple dietetic life. The poor laborer who can never buy a dainty does not show up well as a workman. Even a horse wants a change now and then, and the cat is an incorrigible thief. The lower races which subsist on plain and unvaried foods are inefficient workmen, but if they are given a more varied diet they do quite well. Military men have found it impossible to confine an army to a fixed ration, for every soldier spends more or less of his money for occasional dainties. Restaurants follow armies even into battle. Are luxuries to be classed as necessities? Of course one would not so class a dish of nightingales' tongues, but perhaps such articles as oysters, caviar, and a host of fruits and vegetables, all of low nutritive value, are necessities on account of the intangible qualities of taste and odor which have escaped the notice of our new physiologists. It has often been said that the alcoholic tendencies of soldiers and sailors of former times were an expression of depraved nervous systems due to plain, tasteless, unvarying foods. This may be true, for alcoholism is a sign of nervous depression. Since the diet of these men has been greatly improved by the addition of "luxuries," drunkenness has been enormously reduced.

The adulteration of condiments and flavors thus takes on an entirely new aspect. Our pure food laws most wisely

included them, but perhaps mostly to prevent fraud. Yet there is urgent need for inspection and control of all such articles including those generally considered luxuries, but which may be necessities whose impurity injures public health. Attention has often been called to the fraud by which two cents' worth of apple sauce is colored, flavored and put in a fancy jar and sold for fifty cents. It is generally assumed that the fraud was not inimical to health, but if these new ideas are well grounded there is a serious damage, for the buyer does not get what he really needs.

Revision of the U. S. Pharmacopeia should interest every American physician. The pharmacopeia of a country is a reliable index of its pharmacologic, if not of its therapeutic progress, and the United States should take no inferior position among civilized nations in this particular. On every hand there have been heard the most caustic criticisms of the 1900 Revision, and while some of these have been just, the great majority of them have been ill timed and unwarranted. The U. S. Pharmacopeia is not perfect, but in the main it is a splendid work and the result of earnest, praiseworthy efforts. We unhesitatingly say that those responsible for the last Revision deserve nothing but commendation. It is easy to find fault and pick flaws in every work, but the time is near at hand when those who criticize the Pharmacopeia can be heard if they have any suggestions to make. The Revision Committee welcome opinions and honest criticisms from every source. Let every man, therefore, who has something to say on any detail of the Pharmacopeia, say it in the proper way, and in the proper

spirit, or else forever hold his peace. He should send his communication through some member of the Committee, and he may rest assured that his suggestions will be given the consideration they deserve.

A National Pharmacopeia is of great importance. It meets the need for an official compilation of the medicinal agents of a given period, and represents as far as any compilation possibly can, the orthodox views on pharmacy and materia medica. As such, it is of evident usefulness, and should be carefully and painstakingly studied, not only by medical students but by every intelligent practitioner. It is not and never can be a therapeutic guide or a *vade mecum*. Valuable as are its uses and laudable as is its purpose, it is the height of folly to make it a fetish or to limit all practice to the drugs it describes. Such a suggestion approaches perilously near to the worst type of bigotry and narrowness, and if followed would cast a blight on all therapeutic progress. Let us, therefore, be sensible, recognize the great usefulness of this worthy book in its proper place, and if we cannot ourselves add to its utility, let us not hamper by hasty criticisms those who can. Let us become conversant with its contents and use therefrom whatever appeals to our judgment. But in our appreciation of its worth and value, let us never as broad minded, intelligent men, be blinded to its limitations. *Modern medicine is too catholic in its aims and teachings to be bound by pharmacopeial dictum, any more than by any other arbitrary therapeutic creed.*

Human culture tubes is a descriptive term that might well be applied to those individuals who, following recovery from

an attack of some infectious malady, continue to act as host, and to cultivate virulent pathogenic organisms without harm to themselves. The frequency with which typhoid fever patients become "typhoid carriers" for oftentimes long periods is well known, and a very interesting case has recently been recorded near Washington, D. C. It was that of a woman, who eighteen years ago had typhoid fever, yet who still continued to throw off virulent bacilli in her ejecta. Unfortunately she was employed in a dairy, so that her innocent incubating power led to disastrous results and was the immediate cause of a typhoid fever epidemic. The question will be at once suggested, why, if this individual has been constantly discharging virulent bacteria, have there not been other outbreaks of typhoid fever traceable to her? This is difficult to answer and would require an exhaustive study of the case. It may be that we have much to learn about the incarcerating as well as the cultivating properties of the human body. At any rate the fact remains that these typhoid carriers exist and also that diphtheria patients for often a long time after complete recovery may carry virulent Klebs-Loeffler bacilli in their mouths and pharyngeal crypts. The problem immediately presented, is how to reduce the obvious dangers. The difficulty of enforcing restrictive measures on well people is apparent but the urgency cannot be denied in the light of cases like the one above quoted.

Whenever typhoid fever occurs and its origin is obscure, individuals in the family of the afflicted who have ever had an attack should have their excreta examined. In fact it would be a most excellent plan,

if it was feasible, to have every person after recovery from typhoid fever, examined at regular intervals for several years. If the bacilli are found, the individual should be warned of his or her menace to the community, careful instructions as to disinfection of the ejecta should be given and every effort made to disinfect the individual. The disappointing action of practically all internal antiseptics makes this latter a most difficult proposition, but its necessity deserves the most strenuous efforts. It is entirely probable that further studies of hexamethylene-tetramine (urotropin) will show that we possess a reliable internal antiseptic in this drug, and in passing it may be said that the recent investigations of several competent observers justify expectations in this direction.

The great point, however, is recognition of the danger from these human infecters, for recognizing a danger is often half the battle in the prevention of its materialization. In a large measure, it is a matter of education, and as knowledge extends the cooperation of intelligent patients can be confidently expected. It is one of the most encouraging features of sanitary work, that the people when they once understand the necessity and motives of preventive medicine are the most enthusiastic promoters and adherents of its practices.

Intra-Nasal Use of Lactic Acid Bacilli.

Following the experiments of Elie Metchinkoff upon the use of lactic acid bacilli in intestinal fermentation and putrefaction, investigators in other fields of medical research are seeking to profit by what has been learned already relative to the bactericidal power of these organisms. Not the least interesting and important of

these adaptations to pathological conditions is their use in certain diseases of the nose, as reported in a paper read by Dr. Holbrook Curtis before the Section on Laryngology of the Academy of Medicine on October 28th. Dr. Curtis's cases have been few in number and have been limited to accessory sinus disease, and that particularly disgusting condition, atrophic rhinitis, which has been for so long a time a reproach to the science of laryngology. In the discussion which took place following the reading of the paper, the fact was made known that this treatment has been on trial for only a few months, and that it is as yet all too soon to affirm anything definite concerning the curative powers of lactic acid bacilli when thus applied. There was a consensus of opinion, however, in favor of the method as a palliative measure. In all cases of ozena in which it was used, there was a softening of the crusts, complete relief from the horrible odor and a general improvement of the patient's condition. It was noticeable, however, that if treatment was discontinued for a few days there was a gradual return of the old symptoms. One case shown was an empyema of both frontal sinuses. Here the anterior ends of both middle turbinates were ablated, the sinuses washed out by catheter, and the lactic acid culture instilled with complete cure, in so far as could be determined in the three months that have elapsed. If daily applications are made to the nose, the reaction is rather intense, so that every alternate day seems quite sufficient. The cultures used in these cases were specially prepared by local laboratories and were about one and two-tenths per cent. (1.2%) strength.

It would seem that the profession has a right to be enthusiastic over this new lactic

acid discovery even if it is in no sense a curative agent. Hundreds of suffering patients will rise up and bless any effort which improves their condition even for a short time. In the meantime it remains for some courageous investigator to determine the varieties and life histories of bacterial flora living in the upper respiratory tract, and definitely learn to what extent they are influenced by organisms of the lactic type.

The increase of criminal abortions has been made the ground by several recent writers for the most outrageous condemnation of the medical profession. It is high time that some one had the courage to protest against these indiscriminate accusations, which so unjustly stigmatize practitioners of medicine in general. There is not the slightest truth in the inference that criminal practices are increasing among medical licentiates, for there never was a time when the moral sentiment of the profession was so high, or the realization of its moral obligations so thoroughly appreciated. Honorable physicians, of whom there are more in this country to-day than ever before, respect their calling too sincerely to resort to practices so abhorrent to every decent instinct. They prize their reputations, and love their dear ones too truly to endanger their honor by acts concerning which there can be but one opinion. No, if criminal abortion is increasing, which certainly seems to be the fact, the world must look elsewhere than to licensed physicians as the cause. Investigation will bear out this statement, and show beyond controversy that midwives, non-licensed doctors, *and women themselves* are really the propagators of this evil. A few medical men may stoop to these crimes, but they are few in number—outcasts as it were, and by no means the men who make up the body medical. It is a gross libel, therefore,

to accuse the profession in such a general way, and every unqualified statement in this direction is false and malicious.

The cure of the criminal abortion evil rests with society. When the good, moral, Christian people of our land look upon the maiden "who loves not wisely but too well" with more charity and pity, and less abhorrence, and provide more and better opportunities for erring ones to bear their cross of unwelcome motherhood away from the talons of the scandal mongers, then will the evils of abortion rapidly decline. It is all right to preach the sacredness of motherhood, to point out the crime of sacrificing an innocent unborn babe, but how about the curse which the world so readily pronounces on the "fallen one!" It, more than any thing else, drives countless unfortunates into the lap of crime. Secrecy is the one great object, for they dread more than anything else the sentence that the world is all too ready to impose.

Therefore, if we would greatly decrease the abortion evil, let us be more kind, more charitable to the girl, who almost always is "more sinned against than sinning"; let us provide more opportunities for the preservation of her secret while she is fulfilling her obligation to nature; and above all let us recognize that bearing a child out of wedlock is not incompatible with true repentance and a future of honor and usefulness.

The proudest work of the writer of these words, lies in the aid he has been able to give to many young women who came to him in the worst trouble that womankind can meet. It has not been hard for him to show all of them that secret, honorable motherhood is infinitely better than secret, dishonorable crime. Such a doctrine has not only given the world a good many lives but it has restored a good many girls to purity and honor.

ORIGINAL ARTICLES.

THE TEMPORAL BONE; THE DISEASES TO WHICH IT IS SUBJECT, WITH ESPECIAL REFERENCE TO OTITIS MEDIA.

BY

F. E. WALLACE, M. D.,
Pueblo, Col.

The limits of so broad a subject as this cannot possibly be reached on this occasion. In offering a paper to this Society, I wish to impress on you as general practitioners, the attitude on this subject, universally taken by the otologist, and which, fortunately is rapidly disseminating itself throughout the ranks of the whole profession.

I wish to present it with a view of inviting attention to certain important symptoms and relationships which I believe are worthy of more consideration at our hands, and, if possible to stimulate a closer attention to these points.

First the anatomical relationships of the middle ear are the Bones, Lateral Sinus, Bulb of Internal Jugular Vein, Knee of Internal Carotid, Middle Fossa of Brain, Facial Nerve, Labyrinth and Internal Ear, Semicircular canals, Cochlea, etc.

I have here specimens and pencil drawings showing the anatomical land marks.

Physiology. There are many theories as to sound conduction; all agree as to the sound wave being conducted to the membrana tympani through the external canal and thence to the oval window, principally through the chain of ossicles as well as partly through the air of the tympanic cav-

ity to the round window. The wave is taken up then by the fluid of the labyrinth and conducted to the hair cells in the organ of Corti and thence to the brain centres in the cortex, when the tone picture forms the final step in the process of the tone perception.

The Hemholtz theory—and many agree with it—is based on the idea that the basilar membrane, in the cochlea, vibrates and then transmits motion to the hair cells; for they rest on this membrane.

Dr. G. S. Shambaugh of Chicago, who has made extended research and has worked it out with pig's ears, after indefatigable labor, states that in many specimens he has gone over, the basilar membrane has been found to be of osseous material and therefore incapable of vibrating. I have gone over these slides myself and could readily see the osseous structure and therefore understand that the Helmholtz theories are untenable. Shambaugh has advanced the idea that it is more than probable it is Reisners membrane, (which extends across the scala vestibule,) that transmits or takes up the vibrations to the brain.

It has been well said, "The prevention of disease should be the highest ideal of all physicians." Because of the ignorance and carelessness of our patients and the laity generally, the prevention of disease and ideal results in their treatment are oft-times impossible, but we must put forth our best endeavors at all times.

Sir Astley Cooper has said: "No injury of the head is too slight to be despised nor too severe to be despaired of." We can apply this teaching to the temporal bone and its diseases.

We cannot take the time to enter into a discussion of all the diseases of the temporal bone or to enter into the details of

¹Read before the San Louis Valley Medical Society at Wagon Wheel Gap, June 30th, 1908.

any original contribution. I know that many medical men often consider it time wasted to listen to a discussion on a specialty but we are practitioners of medicine and we must consider every symptom of disease a stepping stone to diagnosis.

I offer no excuse in bringing this subject forward for your consideration, because statistics show that 90% of the cases of septic meningitis are due to suppura-

from the results of such aural conditions or their complications.

On the other hand, Oschner shows a mortality of only $2\frac{1}{2}\%$ in several thousand appendicitis cases. Pus discharging ears thus claiming $\frac{1}{2}\%$ more deaths than appendicitis.

Ponfick has demonstrated that in one hundred autopsies of unselected cases of infants dying under two years, there were

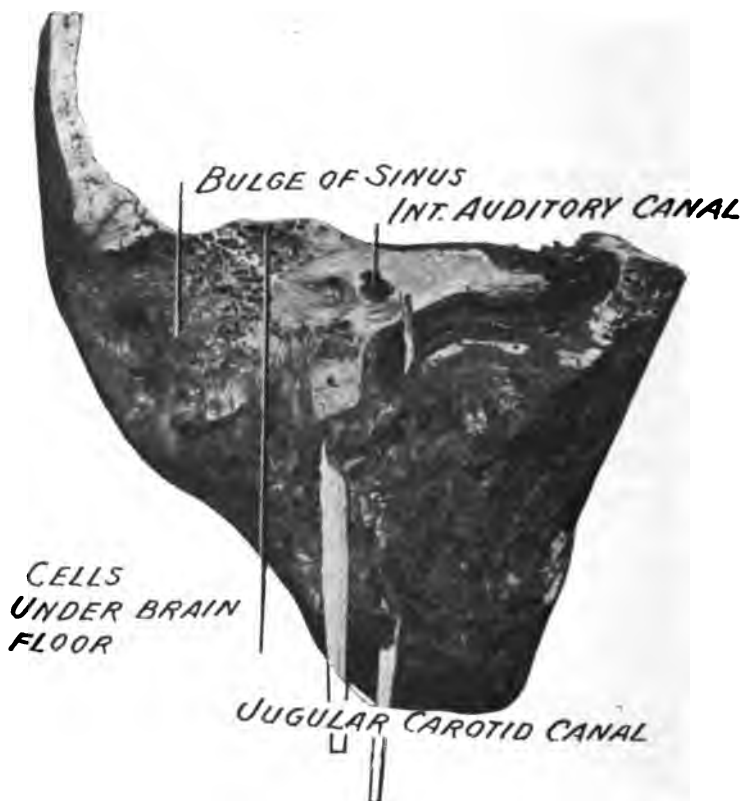


Fig. 1.—Right Temporal Bone. Posterior Half.

tive otitis media, that 4,000 otitic brain abscesses occur in the United States every year, and that nearly all the cases of thrombosis of the lateral sinus are due to mastoid necrosis.

Another author says that over 50% of all cases of intracranial disease had middle ear trouble, and that 3% of all the persons suffering from pus discharging ears die

only nine without pus in the middle ear. Sixty to 80% of exanthematous cases have otitis and half of these cases are unsuspected. "This constitutes a story which should be repeated until it is current knowledge in the mind of every general practitioner." Because of these facts, I shall dwell more particularly on this phase of the subject.

The diseases which we most frequently meet with are acute and chronic middle ear suppuration, furunculosis, granulations, polypi, necrosis, foreign bodies, and traumatism. Of these, acute and chronic middle ear suppuration occur more frequently than all the others combined and may occur with or without the more or less severe and serious complications; i. e.; meningitis, extra dural abscess, cerebral abscess, thrombosis, etc.

Otitis media can well be compared to appendicitis. Infection within an enclosed cavity, because of the inflammation, closes the port of entrance through which the infection gained admittance; the pent up pus and gases produce pressure; necrosis or rupture follows; infection then extends to other parts; septicemia, death are the logical result. The pictures are the same, are they not? In appendicitis, we have had a campaign of education for years past, both for the laity and the practitioner, with the result that we point with pride to the lowering of the fatality record. We need an awakening to our duties toward our patients with ear trouble. A campaign of education must be waged with the laity and more especially with the parents; they should be brought to realize that earache or a pus discharging ear is just as important as pain in the abdomen or tenderness over McBurney's point. I think you will all agree with the analogy and its lessons.

Just as you will immediately on making a diagnosis of appendicitis commence treatment, so should we as quickly begin to treat an otitis media, telling our patient not only of the grave dangers, but also of the imperative necessity of early treatment and faithful nursing.

Examine not only the drum membrane

and external part, but picture the conditions of the middle ear and its important relationships. Clinically, every otorrhea should be regarded as the consequence of an invasion of the chambers of the middle ear by infective micro-organisms. It is the most obvious and persistent sign of a local infection.

In thinking of the middle ear, most of us are apt to fix our attention upon the tympanum; but we should remember that the antrum and the cells of the mastoid process and the eustachian tube are also component parts of the middle ear. It is almost inconceivable that an inflammatory process, either acute or chronic, should be limited to the tympanic cavity. It is not to be supposed that the tympanum may be inflamed while the antrum, lying adjacent and having the same vascular supply and the same innervation, and a living membrane of the same nature, remains unscathed by the disease.

These things being true, it is evident that we must search for the sources of an otorrhea, not only in the tympanic cavity, but also in the antrum, the cells of the mastoid and in the eustachian tube. The changes in the mucous membrane and in the bony walls, may present every degree of intensity and every stage of progress.

The disease may spread by erosion of bone, by escaping through blood vessels, the apertures of the bones, or the lymphatics, and infect the extra-cranial structure as well as those within the skull. Suppuration will usually occur notwithstanding our greatest precautions but its complications should not be allowed to take place, for efforts put forth in the right way, may prevent them.

Many parents think that a discharging ear is a trouble which the child is bound

to have. Just as they consider contagious disease a nuisance that must be put up with, so ear trouble is too often of no especial concern and we are not asked for advice or treatment. I doubt if any physician to-day would put an inquirer off with, "It

It is not necessary to enter into a complete discussion of the etiology but suffice it to say, that of all causes the exanthematous diseases, measles and scarlet fever play the most important part. Adenoids is next on the list with influenza and enlarged

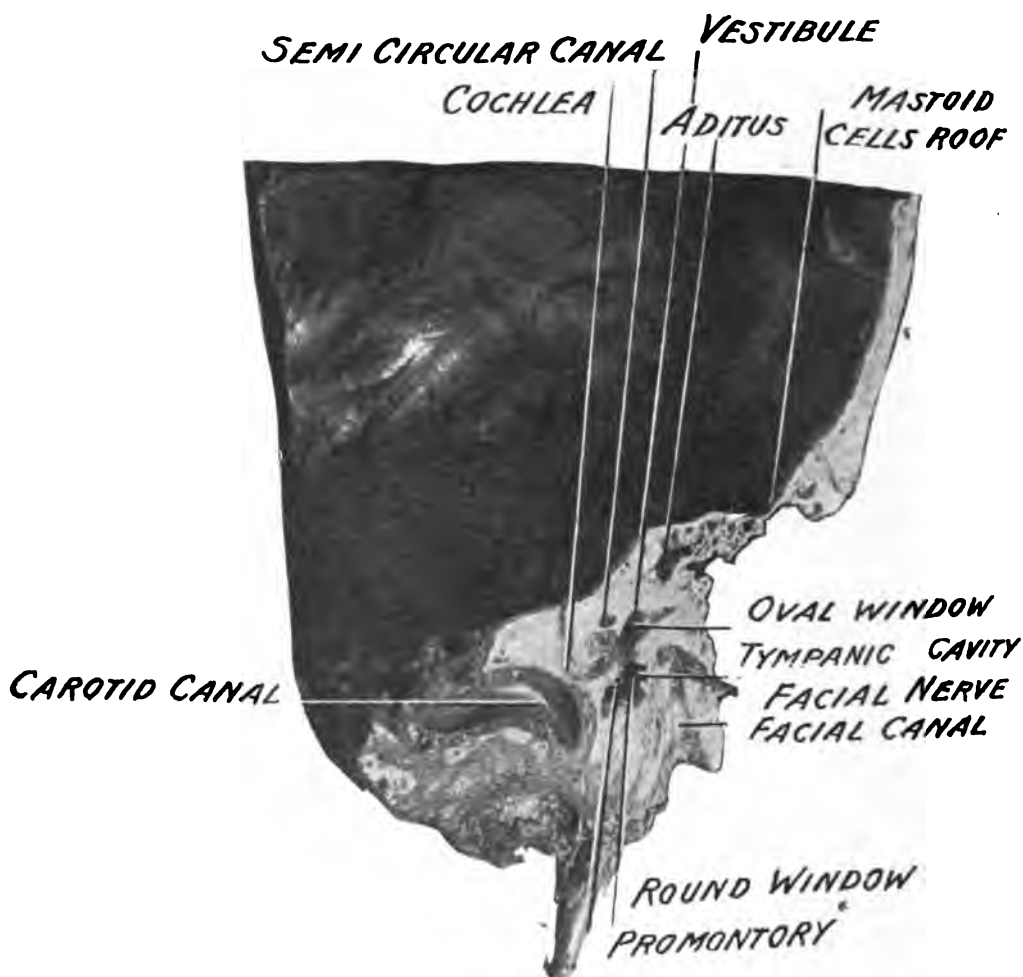


Fig. 2.—Right Temporal Bone. Anterior Half.

is not a serious matter; the use of a little warm water will soon cure it," or, "Oh just wait, it will cure itself," or, "Let it run, he will outgrow it." Therefore more and more the laity are coming to the realization that these little patients with even the slightest ear trouble are living under perilous possibilities.

tonsils following closely. Any text book will give us the causes, symptoms, diagnosis, etc., and with these points we no doubt, are all more or less familiar. I wish however, to emphasize the necessity of familiarizing ourselves with the ear speculum and the picture of the normal membrana tympani; for then, when we see an inflamed

drum, we can better recognize the condition present, and decide on its treatment.

The important points to notice in a normal ear drum are: color, transparency, and lustre, with the light reflex. If these are so altered that they do not approach the normal, it is indicative of disease. The color of the tympanic membrane is a pearl grey and when seen with light reflected from a blue sky, it presents a pale blue tinge but if the source of the light be an oil lamp, it has a reddish-yellow color. We must remember that it is a translucent, so-called cloudy membrane but it is transparent enough to allow the handle of the hammer to be seen; also in most cases, the short process of the hammer and long process of the incus, and in some cases, the stapes can be made out. The lustre is a clean cut and consistent reflex of light which commences at the end of the handle and spreads, cone like, to the periphery. If familiar with the normal appearances it is very easy to discover the abnormal and if with the subjective symptoms we find the membrane very red or a dirty yellowish color we can readily make a diagnosis of otitis media.

Pain in the ear is a symptom that means a congestion; a congestion means hyperemia of a part; hyperemia means a condition of plethora, plethora means abnormal fullness of the blood vessels; hence our symptoms of pain. Inflammation means a morbid condition with hyperemia, pain, heat, swelling and disordered function; in other words disease.

It is a very short step from inflammation to suppuration—heat and moisture, plus germ life and we have it. The appearance of pus in the meatus indicates a perforation of the membrane; a perforation of the membrane indicates a suppura-

tion of the middle ear; suppuration of the middle ear means infection of the tympanic cavity and in some cases of mastoid cells. The middle ear includes all the structures from the opening of the eustachian tube at the pharynx to the tip of the mastoid process. The mucous membrane is continuous and air is admitted to the mastoid cells through the tube. So it is difficult to conceive of a suppuration in the tympanum, without involvement of the mastoid cells.

Nature may cure a large proportion of the acute cases involving the mastoid, and that without our having known that it was involved, because of the lack of the group symptoms which we usually look for in mastoid disease. It is this fallacy of grouping symptoms which often puts us off our guard, but since it is seldom that we meet typical cases of any disease, why picture a typical case of mastoid disease?

It is only when nature in her struggles to cure, has forced upon us symptoms which we cannot mistake, that we step up and make a diagnosis. There are many cases in which the symptoms are so mild, that attention to the ear, much less to the mastoid will hardly be drawn. But it should be remembered that an abscess may burrow in any direction with slight symptoms. Downward into the neck, even to the sternum; forward to and involving the glands of the jaw; to the eye structures; cheek and bone structures; and inward to the lateral sinus, brain fossa and jugular vein. Therefore never leave a case presenting the mildest symptoms involving the structures of the head without making an examination of and inquiry about the ear.

The most dangerous class of cases is that in which the outer wall of the mastoid is dense and the opening through the aditus is constricted or blocked, for the pres-

sure will force the infection in the direction of least resistance and necrosis being present, it thus may extend to the vital structures. It is these cases too, that will have fewer symptoms externally, but we also are more likely to have severe pain, which gradually increases and it is imperative to open the cells before penetration occurs.

The use of the various popular ear drops, tincture of opii in sweet oil, camphorated oil and many others, must be severely condemned. They are all utterly useless and have no influence on the pain. This can only be controlled by opium internally.

A 10 to 12% carbolic acid in glycerine has a slight benumbing effect and may help



Fig. 3.—Internal View. Right Temporal Bone.

In the catarrhal form it may be a mild or abortive case, but if the pain be continuous for thirty-six hours, it surely is purulent and will perforate the drum, if it is not punctured. It is only when the pain is distinctly intermittent that surgical puncture should be deferred. Our first duty is to relieve the pain and that is our patient's first demand.

a little to control pain and it also sterilizes the canal, but in severe cases, it will be of little use. Alcohol may be added to the solution; 10% ichthyol in glycerine or a solution of picrotoxin, can also be tried. All these solutions should be used hot. The hot water bag sometimes gives slight relief.

Paracentesis is not only the quickest way

of relieving the pain but gives immediate drainage and by preventing secondary changes causes the disease to pursue a milder and shorter course.

If the temperature rises, and tenderness and pain develop in the mastoid region, we surely have the inflammatory process extending into the cells. The object must now be to abort or control it, therefore, apply the ice bag, just as continuously and carefully as in our cases of appendicitis.

It must be applied early and persistently; and the time elapsing in removing and reapplying the ice bag must not be over three minutes. Intestinal elimination it is needless to say must be vigorous and thorough.

Complications, Sequelae and Results.—Polypi, adhesions, granulations, caries, cholesteatoma, mastoiditis, sinus thrombosis, facial paralysis, meningitis, brain abscess, pyemia, partial deafness, total deafness, deafmutism and too often death

Rather a discouraging array of facts, but not a bit overdrawn.

After admitting that there are such possibilities, can we regard the "running ear" lightly or indifferently? In the exanthematous diseases, watch your patients' ears, nose and throat as carefully as you do their pulse and temperature. Simple measures may abort the threatening suppuration. If a case be chronic, treatment should be instituted with object of healing as promptly as possible, but if, in spite of treatment, we can not stop the discharge, some of the above complications are likely to be present, when it will be necessary to carry out more radical measures.

Therefore, insist that a discharging ear needs treatment continuously until it is healed. Insist on the removal of adenoids, enlarged tonsils and hypertrophied turbi-

nates; insist that the nasal catarrh shall be treated; insist on the thorough use of antiseptic sprays and ear douches during the course of exanthematous disease. Insist that pain in the ear is a distress signal and should have immediate attention, and that if not controlled in twenty-four hours to thirty-six hours more radical measures must be taken.

Insist that mild symptoms are not necessarily an index to mild conditions. Insist on your advice being heeded, for thereby, complications and sequelae are prevented.

Indications for operations on the mastoid bone are as follows:

First. In the acute primary inflammation, if under the application of antiphlogistic remedies (especially ice), pain, edema and fever do not cease after a few days—not more than eight.

Second. In secondary inflammations in which the symptoms are the same as in the acute cases and in which the above treatment has not aborted the process.

Third. In chronic inflammation with repeated attacks of abscess or fistula.

Fourth. In chronic suppuration of the middle ear without other symptoms of inflammation of the mastoid, as soon as symptoms and complications arise which endanger life—such as retention or cholesteatoma.

Fifth. In otherwise incurable neuralgia of the mastoid process.

Sixth. As a prophylactic operation against fatal sequelae, or fetid suppuration, even without signs of inflammation of the mastoid or retention.

There is one sign which indicates operation under any condition and that is the sinking down of the upper and posterior wall of the external canal. Still another, is a profuse discharge lasting three to six weeks, even with treatment.

REPORT OF CASES.

Case No. 1.—"Lillian R—, aged 15, had earache for 6 days, with fever following a chill. Then rupture of membrane with

of 101 degrees. She was weak, pale and profoundly septic. The following day, she had pain in the other ear. I found an intensely congested membrane with yellowish cast to lower half. I advised and did

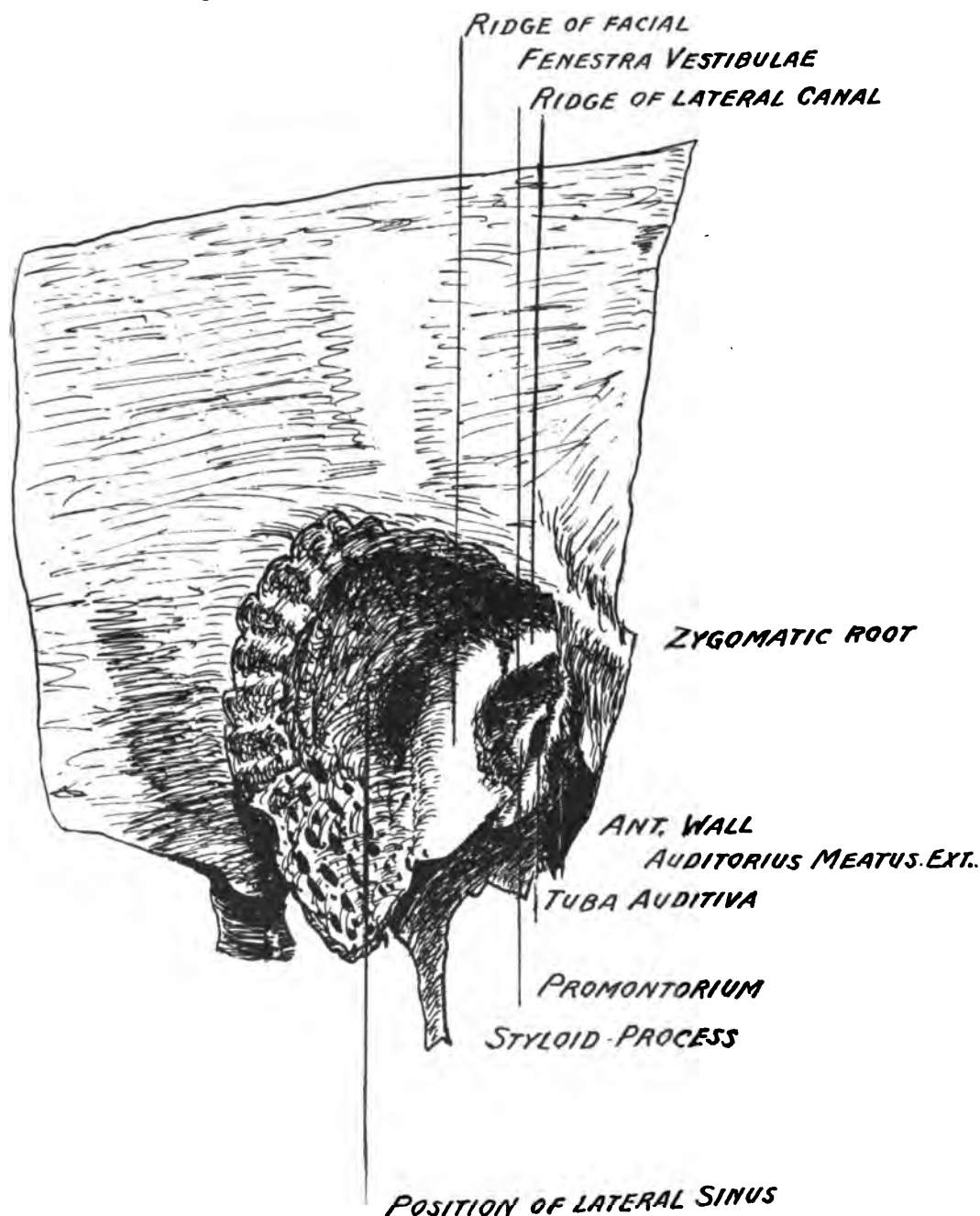


Fig. 4.—Completed Radical Mastoid Operation.

a profuse discharge occurred. I was now consulted, for the parents were somewhat alarmed by the pus. I found temperature

paracentesis at once. The discharge of pus was slight and lessened each day. Temperature was normal the second day follow-

ing. Healing complete in 17 days. The ear which had ruptured was discharging and lessening slightly each day but it was 4 weeks before healing was complete. Hearing much more acute on side of paracentesis."

The lesson here is obvious. How fortunate was she, that the rupture took place and that she was saved the graver peril of mastoid involvement!

Case No. 2.—"Carrie D—, aged 6, subject of scarlet fever. One week following onset, pain in ear developed and 2 days thereafter rupture occurred. The rash disappeared in proper time but the temperature with pus discharge continued. Albumin found in urine. Two weeks after rash disappeared, I was consulted. Temperature 103 degrees. Tenderness with faint blush was found over mastoid. I advised immediate operation. Operation was performed by another surgeon who was consulted. Brain found affected and patient died."

Here the gravity of the symptoms were not noticed early enough by the physician in charge, and a life was sacrificed.

Case No. 3.—"John W—, aged 55, laborer, had earache for a few days. Treated at a dispensary for a week. Purulent discharge commenced. He then went to a general practitioner who recognizing the danger, kept a careful watch of the symptoms and when tenderness, edema and pain in the mastoid came on, I was called in consultation. I advised immediate operation. Mastoid cells involved. Conditions were such that I did the radical operation. Recovered with complete healing in 3 weeks."

The chances here for meningeal involvement were great and if the dangers had not been recognized by his physician there might have been a death certificate to sign.

Case No. 4.—"Alice B—, aged 19, office girl, had a purulent otitis media with rupture of the drum head, following treatment, given by a quack, for catarrh. The family

physician attended to it and advised her in its treatment for 4 or 5 weeks. The discharge became profuse with pain in and around ear about a week prior to my seeing her. On examination I found a very profuse, foul smelling discharge from external canal and a large tense fluctuating swelling over the mastoid. Temperature, 101 degrees. Pale and weak. I advised immediate radical operation. Following the incision from 1 to 2 ounces of pus gushed forth. Necrosis of the mastoid cells and internal wall with thrombosis of sigmoid sinus had occurred. After several weeks she fully recovered."

Death certainly would have followed very shortly had no operation been performed.

Case No. 5.—"William P—, aged 39, laborer, had not been feeling well for a few weeks. Had irregular pains about ear for some days previous to seeing his physician, he having had a slight chill and fever but no prominent symptoms about ear and he complained but little. Symptoms of typhoid were most prominent features at this time. The ear symptoms becoming more prominent, an ear specialist was called in. He found inflammation of membrane, but symptoms involving the mastoid portion could not be discovered. His fever increased and he complained of pain and soreness of neck and back and a convergent squint and delirium came on. Recognizing the seriousness of these symptoms involving the meninges, his physicians had him transferred to the hospital, where I saw him. With an increased fever, delirium, squint, retraction of head, pain around ear and inflammation of the membrane, we made a diagnosis of meningitis from purulent otitis media. Case being considered hopeless, I advised no operation. Patient died in about 24 hours."

This case was one in which the ear symptoms were not prominent and in which the involvement of the mastoid could not be determined by external signs and in which the involvement of the meninges was only determined by the squint, delirium and pain in the movement of the head.

THERAPEUTICAL EXERCISES.¹

BY

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By therapeutic exercise we mean the use of exercise for the prevention or cure of disease and the correction of deformity.

In this report I shall confine my remarks to personal experiences extending over a period of nearly twenty years in the use of this form of therapeutics, used as an adjunct in the treatment of organic disease, and for the correction of physical defects or deformities.

It is recognized that by "muscular exercise the functions of respiration, circulation, nutrition and excretion are all profoundly affected, and the heat-controlling mechanism of the skin and sweat glands are stimulated to greater activity." Hence, in diseases of the various organs, exercises should be selected for such function or organ as will tend to reestablish its normal relation in the economy.

Regarding man as an animal we must recognize that the vital function of the muscular system, the neural system and the life giving function, i. e., (lungs, heart, stomach, pancreas, liver, spleen, kidney, intestines, etc.,) require exercise to keep up their normal work. We must recognize the changes produced by occupations of men and women and the indoor life of women.

It has become necessary owing to the studious life of school children in our large cities that something should be done in the way of muscular exercise to obtain normal physical development. If proper attention is not given during the child's maturing

years, the normal resistance is not developed and it is unable to withstand the numerous forms of bacteriological invasion that sooner or later imperil human life. So we should ever bear in mind, as part of our armamentarium to be used in the prevention of disease, the great value of building up the child to the highest point of human resistance, recognizing that in life our success depends quite as much on physical endurance as upon intellectual ability.

Not being able in a limited time to take up more than a few of the ills that flesh is heir to, I will devote the time at my disposal to those that are most common.

Until a very recent date the consensus of medical opinion was that the tuberculous lung should have absolute rest. Having had a very extensive experience, I wish to state that I have given (by aid of competent professional nurses), not only breathing exercises in ordinary cases of phthisis, but also in hemorrhage and temperature cases with the most successful results.

To digress for a moment, no doubt many suppose that exercise as well as outdoor and tent life in the treatment of phthisis is quite new. I will quote from one of the ablest American physicians, Ben Rush, "Medical Inquiries and Observations, Vol. I, 1805" the following: "There is no virtue in change of climate but in exercises in the open air. A change of climate has often been prescribed for the cure of consumption, but I do not recollect an instance of its having succeeded except where it has been accompanied by exercise."

(b) "Journeys have often performed cures in consumption, but it has been chiefly when they have been long accompanied by difficulties which have roused and invigorated the powers of the mind and body."

¹Read before the Annual Meeting of the American Electro-Therapeutic Association, Sept. 22nd, 1908.

(c) "Vomits and nauseating medicines have been much celebrated for the cure of consumption. These, by producing a temporary determination to the surface of the body, lessen the pain and the cough, enable the patients to use profitable exercises."

"From all these facts it is evident that remedies for consumption must be used in these exercises and employment which gives the greatest vigor to the patient."

Dr. Way, of Wilmington, informed me of a certain Abner Cloud, who was so afflicted by a pulmonary consumption as to find no relief of medicine, was so debilitated by sleeping in the open air and the unusual toils of building a hut and clearing a farm in the unsettled part of the country of Pennsylvania, that he found him in a fair way to perfect recovery."

"Quoting a case of Dr. Benjamin Franklin: a shoemaker who gave up his trade to become a horseback rider, fully recovered his health but found on his resumption of this trade that his trouble returned. He then took up horseback riding, carrying on a business between New York and the Conemaugh river (140 miles) which employment he continued for about thirty years without detriment to his health."

"Dr. Sydenham pronounced riding on horseback to be as certain a cure for consumption as Bark is certain for an intermittent fever."

"If it were possible to graduate the exercise of the system by means of a scale, I should add, that to cure consumption the exercise should be raised to the highest degree of this scale."

My personal method of conducting ex-

ercises is based on the recognition of the following facts:

It has been demonstrated repeatedly that when a person is placed on a body balance and concentrates his mind on an extremity, the hyperemia thus produced tips the body balance in the direction of this limb.

It has been found in the examination of the human brain that when motion of an extremity is guided by mental concentration, the convolutions in the gray matter of the brain presiding over this motor area are increased.

When intra-uterine amputation of a limb occurs, the motor area for this extremity is not developed in the brain.

The nerve efficiency or nervous control as displayed by the gyrations of the Nautch dance can be developed by any person in any set of muscles if a proper effort is made.

The application of these principles can be best accomplished by placing the patient before a mirror, having him concentrate his mind on each movement, and instruct him to go through the various breathing exercises slowly and deliberately.

Now what does this accomplish in the lungs?

1. Deep inhalation increases the intake of air and the amount of oxygen; offers large opportunity for a thorough oxygenation of the hemoglobin into oxyhemoglobin.

2. Produces a marked hyperemia.

3. Forces blood into the anemic apex and base, improving their nourishment and resistance as a result of the improved circulation, and encapsulates local foci of disease.

4. Furnishes oxygen for the thorough destruction of waste products and the destruction or neutralization of toxins.

5. Creates a demand for foods by aiding assimilation and elimination. In the prescribing of tonics, no good is accomplished. We cannot supply a demand that does not exist. Exercise creates the demand for nourishment.

Our breathing is the most important of active functions of the body, all other functions depend upon it. Primarily we live on air, for one can live without water or food for weeks but not without air for more than a few minutes.

Deep breathing as a fine art has to be taught!

The majority of people are half alive, for they breathe just about enough to sustain life, effortless and nearly lifeless. For this reason we should breathe pure air and in the greatest possible quantity.

Let me urge you to add breathing exercises to your therapeutic armamentarium, for all the mechanical functions of the body are naturally benefited by it and life-giving oxygen is the most priceless gift in nature. We must recognize the relation between the action of the lungs and the action of the heart, and learn by developing the lungs, to strengthen and develop the heart. The heart which is called upon to work at a ratio of eighteen to seventy-two is exercised and developed. Its muscle bulk increased and its nerve efficiency intensified. This with resisting movement constitutes the major part of the Nauheim treatment, which has yielded such good results in functional and valvular lesions of the heart.

As to the baths at Nauheim or other health resorts, it should be remembered that the skin is for excretion and not for absorption, and it only absorbs when there is an abrasion or some irritant is applied to it. The carbon dioxide (CO_2) used in the

Nauheim bath is likewise one of the principal human excretions and can accomplish nothing in the bath. When carbon dioxide gas (CO_2) is taken internally in charged waters it passes through unchanged.

In my opinion the virtue of the Nauheim treatment comes primarily from the breathing exercises and resistance movements, together with the long walks prescribed. There is no therapeutic value in bathing in gaseous waters further than possibly from their inhalation.

In the deformities where corrective exercises are indicated special groups of muscles can be developed. In infantile paralysis, where the temporary damage to the cord permits of muscles wasting, this method used by me in hundreds of cases at the Hospital for Deformities and Joint Diseases has yielded the most brilliant results when combined with the proper electrical treatment. It is a waste of time to record hundreds of cases, and I am advising not what exercises to do, but how to do them, to get the best results.

The patient should work before a mirror, concentrate the mind on the physical effort, and what is to be accomplished. In breathing, the patient should take deep inhalation, and in exhaling, expel as much air as possible without holding the breath, and never continuing until he feels exhausted or faint. He should stop at once if the muscles exercised develop a tremor.

If we will add exercising to our mechanical and medical treatment, it will work along natural lines in restoring normal functions and thus produce quicker and more satisfactory results.

Osteopathy has become a school of treatment because the medical profession would not use massage as an adjunct to their treatment. So too, therapeutic exercises

and physical culture will develop a cult if the general profession continues to ignore its usefulness.

Before closing I wish to state that my own interest was awakened by the benefit derived by patients coming under my observation, in the office practice of Dr. L. A. Sayre, and at the Orthopedic Clinic at Bellevue Hospital (Out Door Dept.) for exercises in spinal curvature, who were also afflicted with incipient consumption or who had valvular or functional heart lesions, etc. I found that while improving their deformity a marked benefit was produced in the lungs and heart condition, often to the extent of a practical cure.

The following cases illustrate results obtained by this method of treatment:

Case 1. A, consulted me in July, 1903, giving a history of cardiac disease with a mitral murmur and progressive loss of compensation. Pulse taken several times on first visit, varied from 150 to 160 with corresponding distress. Much discomfort and disturbance on very slight exertion; loud murmur heard over chest and back. Four weeks previous to my seeing him, in consultation with the family physician, a fatal prognosis had been made.

He was placed in charge of a professional nurse who gave him daily instructions in breathing exercises. At first he was obliged to rest every few minutes. After six months he was able to work for twenty minutes with his heart not beating faster than 80 or 86. His general condition has remained good for the past five years. He still retains his mitral murmur but his heart continues to compensate. For the first six weeks under treatment he was given tincture of *nux vomica*, and tincture of *digitalis* as a heart stimulant; after a short time these were discontinued.

Case 2. Miss —, the daughter of one of our leading specialists, came to my office without the knowledge of her father, nor did I learn till six months later that her parent was a member of the medical profession.

She had a mitral murmur, the pulse missed every seventh or eighth beat; gave a history of falling in a faint two or three times a week, generally at meals or after eating a hearty meal. To avoid this she had eaten sparingly, which resulted in increasing her anemia and debility.

In the beginning of her treatment the tinctures of *nux vomica* and *digitalis* were given her. To improve her strength white of egg and diluted cream were given between meals. Her first lessons in breathing were performed while lying on a couch. After six months of continuous treatment she had gained fifteen pounds, her general health and strength had markedly improved, and when I determined to have her depend upon her own work and dismiss the nurse, I was requested to meet her father, as he desired to continue the breathing exercises. I then learned the identity of my patient. Her father's first words to me were, "I know that I owe my child's life to the results of her course of breathing exercises." She has married and still retains good health; has never had any fainting spells since.

Case 3, referred to me by Dr. Berel. Child five years old had been ill almost constantly from birth. On examination, large cervical glands were present. He had a pale pasty color and showed little vitality. Nothing could be detected in the lungs further than a mild bronchitis. He gave a history of frequent colds. Weight, 40 pounds. He was placed in the care of a teacher of breathing exercises. Nourishment was given every two hours. The tax of exercise showed in the first month and great care was taken to prevent over fatigue. In six months the boy had gained one-quarter of his weight on beginning treatment, ten pounds. His cervical glands have shrunk to normal size and his health is perfect.

I may add that in over one hundred cases seen by me of cervical adenitis where operation had been advised, a course of training with tonic medication added has assisted nature to throw off the infection. In other cases where repeated operations had been performed and the discharge still continued, efforts at restoration by exer-

cise and diet have finally accomplished a cure.

I might mention a case of Dr. J. Vanderlyn: A Miss D. who was originally sent to Loomis Sanitarium and returned home to die. Patient's family were told she was in the third stage of consumption. On my advice a nurse was employed to give her a course in breathing. Patient was placed on white of egg and diluted cream and light diet. After one year her physician regarded her as practically cured. She has remained well for two years.

The cases cited are the unusual ones and show what may be done even in extreme cases. I do not think that any harm could be done in any case where the physician gave the breathing exercise, if the breath was not held in forcible inspiration.

In conclusion I wish to say that the index to vital force is lung development and in harmony with it goes the development of the heart, and the more perfect conditions in the liver, kidneys, spleen, etc. I am opposed to muscle bulk and muscle building, also to violent exercise and heavy lifting, because their ultimate results to the individual are bad. Work should be done by the individual working alone, and not in classes.

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Varicose Veins.—After an operation for varicose veins, the leg should be placed in a Volkmann splint and the patient should remain in bed for three weeks. Massage with active and passive motion should be gradual, and no active work should be attempted until three weeks more have elapsed. A supporting bandage should also be worn at least for six months after an operation of this character.

The chief complication occurring with varicose ulcers is phlebitis. Rest, with elevation of the limb and a wet dressing, must be insisted upon; however, if the case is seen early enough, an operation can be performed with excision of the thrombus.—*Adams.*

INDICANURIA.*

BY

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Washington, D. C.

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Bowels, Georgetown University.

As far back as medical literature goes it has been known that the intestines were capable of elaborating poisons which produce widespread systemic morbid processes; hence purgation was one of the earliest methods of treatment and throughout all time has held a prominent place in the relief of bodily ailments. With the onward march of medical knowledge some advance has been made in differentiating the various forms of intestinal intoxications, both as to the abnormal chemical processes involved and the clinical phenomena produced.

Among the abnormal intestinal processes resulting in the formation of toxic substances is putrefaction, by which in the restricted sense is meant abnormal transformation of proteid material under the action of bacteria, especially of a group of anaerobic bacilli in the lower intestines. Various toxic substances are thus formed, such as indol, skatol, phenol, and others. These products may be partially absorbed into the circulation even from the colon, which has usually been supposed to be resistant to this absorption, and in circulating through the body give rise to many morbid manifestations before being eliminated by the kidneys.

They enter into chemical combination as the conjugate or ethereal sulphates and glycuronates, and circulate and are excreted as such. Thus, indol is oxidized and unites with potassium sulphate to form a double

*Read before the American Gastro-Enterological Association at its Eleventh Annual meeting, held at Chicago May 1 and 2, 1908.

or conjugate indoxyl-potassium sulphate, the urinary indican. Similar sulphates are formed by the other putrefactive bases, and conjugate glycuronates are produced in similar manner.

Although theoretically the putrefaction and absorption of the putrefactive products may be abnormal, yet under the practical conditions of life small amounts of these substances are produced, absorbed, and excreted without causing any material ill effects. Their presence in the system in these small amounts may be looked upon as normal; when present in larger amounts, however, they may produce toxic manifestations. Their action in this respect may be very subtle and obscure, and a variety of morbid conditions of a functional character in remote parts of the body and apparently unrelated to intestinal conditions may be set up. In obscure cases of this sort, therefore, it becomes important to have some means of measuring intestinal putrefaction in order to determine what bearing the latter may have upon the clinical symptoms and thus to further therapeutic efficiency.

Unfortunately our means of estimating intestinal putrefaction or absorption of putrefactive products are incomplete.

One method consists in the determination of the relative ratio of the conjugate to the mineral sulphates in the urine. Normally the ratio is about 1 to 9; an increase of the conjugate sulphates indicates increased putrefaction of the proteids. This method is too laborious for routine clinical use, and, further, is not always entirely conclusive, as it leaves out of account the putrefactive bases excreted in combination with glycuronic acid and also the variations of sulphur metabolism. Other

equally tedious methods consist in the determination of phenol, cresol, etc., in the urine. Other diagnostic tests which may possibly prove to be indicative of increased putrefaction are the dimethylamidobenzaldehyde and urorosein (indolacetic acid) tests.

Still another method, which is in extensive use, is the approximate determination of indican in the urine. The presence of an abnormal amount of indican in the urine (to which condition the term indicanuria is applied) can be ascertained by simple tests. The test gives no information as to other putrefactive products besides indoxyl-potassium sulphate,—and probably putrefactive toxemia is possible without the indican being increased. But as indican is ordinarily the most abundant of the putrefactive products indicanuria is an important index of the occurrence of intestinal putrefaction.

Besides the putrefaction of the food in the alimentary tract, putrefactive products may be generated from the tissues of the body in necrotic conditions, putrid, stagnant, and chronic suppurations, etc. These sources of indican are exceptional, and after excluding them, indicanuria may be definitely accepted as an indication of the excessive putrefaction of proteid food in the intestines; although the absence of indicanuria does not necessarily disprove the existence of putrefaction.

The foregoing statement of the genesis and significance of indicanuria represents the present consensus of opinion on this subject. Various investigators of the condition have attempted to carry the significance of indicanuria a step further back in the etiological chain and to establish its causal relations to the conditions which de-

termine and control intestinal putrefaction; these attempts have resulted in marked divergence of opinion.

Simon considers intestinal putrefaction and hence indicanuria as closely dependent upon the hydrochloric-acid content of the gastric juice, a normal amount of hydrochloric acid through its antiseptic action preventing putrefactive processes, while a deficiency of the acid will produce increased putrefaction and indicanuria. He regards the relation as being so close that the degree of acidity of the gastric juice may be directly judged by the elimination of the indican in the urine; nevertheless, he usually found indican present in gastric ulcer with its accompanying hyperacidity. He found indicanuria rare in simple constipation, and in diarrheal conditions due to colon lesions.

Musser and Pearce observed the occurrence of indicanuria in various disorders, especially septic conditions localized in the gastro-intestinal tract, e. g. in typhoid fever.

Gilbert and Weil from a study of two cases of diabetes conclude that hepatic insufficiency may lead to indicanuria, on the theory that the liver when acting normally may arrest the indican formed in the intestine, but that an incompetent liver permits its passage into the general circulation and thus the development of indicanuria.

Wadsworth does not find indicanuria specifically associated with any definite disease, although he is tempted to observe "that nervous disorders depending upon malnutrition and those that influence nutrition markedly have a tendency to cause indicanuria."

Wells concludes as follows: "Indican is present in the urine in sufficient quantity to be detected during simple constipation, the amount varying somewhat according

to the duration of the fecal stasis. Obstruction of the large intestine produces a much greater degree of indicanuria than the obstruction of the small bowel and causes in a few hours the most intense reaction, so intense as to be almost characteristic. Large quantities of pus produce a reaction which probably varies with the amount of absorption that is occurring. In carcinoma of the stomach there is usually a reaction when the disease is advanced; but probably not until motility is affected. But in these cases the indicanuria is produced by intestinal putrefaction, which is in turn caused by inability of the weakened general system to digest properly the proteid foods rather than to the cancer. Epilepsy and neurasthenia are accompanied by a varying degree of indican, and probably for reasons spoken of in connection with cancer."

Enriquez and Binet do not find that the condition of the gastric secretion has any influence on the formation of indican; nor that hepatic insufficiency produces indicanuria. They found indican increased in all cases of habitual constipation; and when found in diarrhea they regard this as resulting from fecal retention.

Jaffe states that indican is most increased in intestinal obstruction, and is also increased in diffuse but not circumscribed peritonitis, in which there is a considerable retardation of peristalsis; also in gastro-enteric catarrh, cholera Asiatica, typhoid fever, gastric carcinoma, and some blood diseases.

Porter draws some fine distinctions in the results of the tests for indican, and makes corresponding interpretations as to whether they indicate simple putrefaction or the association of other toxic conditions, and as to the state of the hepatic cells and the functional activity of the liver. He

classifies the etiologic factors concerned in the causation of the indicanuria as chiefly excessive or improper diet.

From the foregoing representative articles it is seen that there is diversity and contradiction of opinion on some points involved; there does not appear to have been as yet any attempt to definitely place the blame for indicanuria, physiologically speaking, upon the organ or organs really causing it.

A study of eighty-two cases of indicanuria which have been observed by me in my private practice during the past six months shows that no one condition or disease is common to all or to a majority of these cases.

The symptom-complex was, however, quite constant, each individual complaining of vague nervous sensations, such as slight continuous vertigo which was increased in dimly lighted places; dull headache; marked languor and drowsiness, especially during the periods of digestion; inability to concentrate the mind upon the work; a decided tendency to early fatigue with complete muscular relaxation; unusual mental irritability; vague pains in the lower limbs. These symptoms are usually ascribed to neurasthenia, but they disappear with cure of the toxemia.

The gastric analyses in these eighty-two cases gave the following findings: In thirty-nine there was marked hyperchlorhydria; in six hypochlorhydria; in thirteen achylia gastrica; the remainder showed normal gastric content. Of the eighty-two, twenty-eight had more or less decided gastric dilatation; while five showed varying degrees of isochymia.

The blood in twenty-seven of these individuals showed well-marked anemia, which cleared up with the disap-

pearance of the indican. This probably explains those chlorotic cases which resist all forms of internal medication, and which are promptly cured by colonic irrigations. Of the remaining fifty-five cases one was a case of pernicious anemia. The other fifty-four were normal.

This series of cases included four having ulcer of the stomach. Of these four, two had marked indicanuria all the time. One had no indicanuria until the middle of the fifth week of treatment at the time he was put back upon a more or less solid diet; the indicanuria lasted but four days and has never reappeared. The fourth case, one of large chronic ulcer at the pylorus, which came to operation and later to autopsy, showed the indican reaction only very rarely and even then but a slight trace, during the months he was under my observation; he also had marked pylorospasm with stagnation of the gastric contents. From my experience I judge that indicanuria in cases of gastric ulcer and hyperacidity is a complication rather than an essential consequence of the gastric disorder.

During this period we have had under observation five cases of cancer of the stomach in which the records of the urine are available, and in which the diagnosis was verified by the course and fatal termination. In three of these five cases the indican was normal throughout the periods of observation; in two others there was a moderate increase of indican.

In one case of cancer of the sigmoid, which came to operation, the indican was slightly increased now and then during the early months of the disease, but later it entirely and permanently disappeared.

Regarding the bowel-action in this series, forty-nine suffered from constipation; six

had chronic diarrhea; eight were troubled with constipation alternating with diarrhea; the remainder had normal daily evacuations.

According to my observations indicanuria occurs in habitual constipation only when the general health has become impaired through neglect or from the pernicious cathartic drug habit by which the intestinal digestion is impaired. I believe it is invariably an expression of intestinal toxemia. That this intestinal toxemia can produce constipation through its inhibitory action upon the nervous system seems certain. It is equally true that when the organism is quite sensitive to the action of the poisons elaborated or when the amount of these toxins is increased beyond the point of tolerance, a sharp diarrhea occurs in the effort to eliminate rapidly the poison; and when the amount again falls below the point of tolerance a condition of constipation results. This readily accounts for many of those troublesome cases where constipation alternates with diarrhea over long periods of time.

From a study of the urine of patients suffering with catarrhal jaundice, cholelithiasis, cancer of the liver, and diabetes, I believe the occurrence of indicanuria with any affection of the liver to be a complication and not a direct result of the diseased liver.

That some cases of complete intestinal occlusion do not exhibit indicanuria is shown in a case of acute obstruction of the sigmoid which is just now under my observation. This woman has been constipated for thirty years, being compelled to take purgatives to secure every bowel action. For the past few weeks, under my direction, she had used enemata with good results. One day she stepped down from

a high curbstone with a sudden jolt and experienced a severe pain referred to the hypogastrium. From that moment, for a period of six days, she did not pass either feces or flatus by rectum. At the operation there was found complete obstruction of the sigmoid due to traction of a tumor causing acute angulation. At no time immediately before the occurrence of the obstruction, during its continuance, or after the operation was there marked indicanuria.

From the close study of these cases it seems certain that the seat of elaboration of the poisons giving rise to the indicanuria may at times be in the lower segment of the small gut, but that they are largely absorbed from the colon. I have come to this conclusion because I have found repeatedly that cathartics by mouth will, in ninety-eight per cent of all cases, either cause no change in the amount of indican or abruptly increase it; while in the remaining two per cent they lessen the amount or cause its disappearance only to recur shortly. Upon the other hand, when these ninety-eight per cent of cases are subjected to thorough high colonic irrigations with normal salt solution the indican in seventy per cent of the cases either abruptly disappears or is markedly reduced in amount; and if the irrigations are continued daily for a shorter or longer period, and at the same time the individual is limited as to the amounts of food taken, the cure is made permanent. Upon the other hand, if the individual is kept upon exactly the same diet and does not take colonic irrigations, while the amount of indican may and often does vary much from time to time, yet the condition with its pretty constant train of symptoms continues indefinitely. I have often noticed that, when a purgative has

been taken during the course of a treatment as above outlined, there is a temporary reappearance or increase in the amount of indican which does not subside until the effects of the purgative have entirely passed off. This also to my mind is added evidence in favor of the opinion which I have expressed as to the seat of this natural laboratory and its distributing center.

The absorption activities of the various portions of the intestinal tract seem to have an important bearing on the genesis of indicanuria. In the colon, where indol is probably chiefly formed, absorption of it is considered to be poor under normal conditions and hence the largest part of the indol is passed with the feces and is not taken up by the blood; but when conditions are abnormal the indol which at times is formed during the disturbed conditions in the small gut, where it is not normally produced, is passed into the colon and if the absorption is pathologically increased it is readily taken up and gives rise to toxic effects and indicanuria.

The following deductions may be drawn from a close study of the 82 cases of indicanuria here analyzed:

First. The seat of formation of the toxins which give rise to indicanuria is in the lower segment of the small gut, as well as in the colon.

Second. The chief distributing center of the toxins is the colon.

Third. The underlying cause producing the toxins is imperfect digestion of proteid foodstuffs in the small gut. Among the most frequent causes for this disturbed intestinal digestion are depressed nerve action due to overwork or disease; amounts, rather than quality, of food taken in excess of the ability of the intestines promptly to take proper care of it; too great preponderance of one class of food taken over too long a period, when at the same time there may be more or less nerve depression.

Fourth. The symptoms of indicanuria *per se* are not those of intestinal indigestion, with the exception of cases in which the degree of the putrefaction is so intense, or the mucosa is so highly sensitive, that toxins act as irritant poisons and cause diarrhea.

The symptoms are quite uniform and present a more or less constant symptom-complex of a nervous or cerebro-spinal type. The symptoms bear a direct relation to the degree of indicanuria. Upon the other hand indicanuria and its symptom-complex bear an inverse relation to the presence of symptoms of ordinary intestinal indigestion or of so-called "biliousness." Fever is not a symptom of indicanuria and when present is due to other causes.

The almost constant symptom-complex is as follows: The individual complains of malaise; a constant but slight headache; inability to concentrate his mind; an intense drowsy feeling but at the same time more or less troublesome insomnia; a constant more or less marked vertigo, which is greatly increased in dimly lighted corridors and rooms, so that he does not walk in a straight line from one point to another; impaired memory and great mental irritability.

Fifth. The symptoms manifest themselves as soon as indican appears in excess in the urine, but persist for a greater or less time after the urine becomes normal, according to the duration of the indicanuria; for instance, a physician affected with indicanuria for a period of five days was entirely relieved of the symptoms within twenty-four hours after the disappearance of the excess of indican. On the other hand, in another patient who had suffered from this condition for eight years toxic symptoms continued for three or four months after the disappearance of the indican and then gradually subsided.

Sixth. Indicanuria in Washington is four times as prevalent from January first to June first as during the remaining months of the year, which fact goes to strengthen my assertion that the underlying cause for the disturbed intestinal digestion is nerve depression. For here where the year's work is crowded into a few months, brain fag begins in the early spring.

Seventh. The cure for indicanuria

must come through preventing the formation of toxins and, what is quite as important, the elimination of the supply already on hand.

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THE AMERICAN CLIMATE AND THE NORTHERN EUROPEAN.

BY

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McClure's Magazine for June, 1908, had a valuable article by Mr. George Kennan on "The Problems of Suicide," and he shows among other facts: (1) that it is certain there are more suicides throughout the civilized world in June than in any other month, and less in December; and (2) that in June there are more suicides on clear days than on days which are partly clouded. In the United States the average annual number of suicides in June is '336, and in December it is '217. He gives the percentage of suicides for the seasons in tabular form as follows:

	United States.	Russia.	Europe.	Japan.
	Per cent.	Per cent.	Per cent.	Per cent.
Spring and Summer,	61	60	59	59
Fall and Winter	39	40	41	41

In discussing the possible causes of these remarkable facts, he rightly says that heat is not a cause, because June is not the hottest month. He continues: "Other writers, including Dr. Gubski, have called attention to the very close relation between suicide and light. It is true that daylight, if measured by hours, has its minimum in December and its maximum in June, in precise correspondence with the seasonal rates of suicide; but what about the equinoctial periods of March and September? If light be the efficient cause, the tendency to suicide should be as great at the time of the fall equinox as it is at the time of the spring equinox; but this is not the case. . . . Light therefore must be eliminated."

The summit of the suicide-curve, however is not at either equinox, but at June, midway between the equinoxes. It will be shown below that ultra-violet sunlight is not only a very powerful irritant of animal cells, but altogether destructive to these cells unless they are protected from it; and it is exactly in June, when suicides are most frequent in the northern hemisphere, that these ultra-violet rays are direct, and longer in application to the human body than at any other time. The equinox is, of course, at that part of the year when the sun is on the equator. In the spring, when the sun is coming north, the equinox is on March 21; in fall, when the sun is going south, the equinox is on September 23. March 21 and September 23 have the same number of hours of light; but June 21 has the light overhead over the Tropic of Cancer, not slantingly and for 12 hours as at the equinox, but directly and for fifteen hours in the twenty-four.

Physicists that work with extraspectral rays, Roentgen's rays, Becquerel's rays, Blondot and Charpentier's rays, and the rays

from actinium, polonium, and radium, must protect themselves or they will be severely burned, or suffer other serious damage. Mr. Hall Edwards, one of the first to apply Roentgen rays in surgery, has lost one arm, and the fingers of the remaining hand from the action of this light. The same rays, of course, exist in the sunlight, and we receive most of them yearly between the middle of June and the middle of July, the month of suicide and homicide.

Finsen found that skin-pigmentation can protect animal tissues from ultra-violet light. Therefore the stronger and more direct the sunlight upon the earth, the more pigmented the people that live under it. Even on a high cold plateau like Thibet the inhabitants are brune, because the sunlight is bright and copious there, and the Eskimos are dark as a protection against the sunglare upon the Arctic snow.

Skin-pigment has a relation also to body-heat. The blacker an object is the quicker it radiates the heat it receives, the whiter it is the slower it radiates received or stored heat. Arctic animals have white fells for this reason, and northern men are white; tropical animals have dark fells and are nocturnal in habit, tropical men are black.

The whiteness of a northern man is never so unmitigated that it does not leave him skin-pigment enough to protect him passably well from the sun of his natural geographical locality; but this whiteness, lack of pigment, does not permit him to thrive in the tropics, or always to withstand June sunlight even at home. Races originally white moved southward gradually; the brunes survived, and the less pigmented died out; the survivors took on more tan, and some went farther southward, with a repetition of a survival of the fittest, until the tropics were reached, and blackness of skin

resulted. When man migrated northward after the glacial period, the brunes died out, and the whiter man survived, until gradually the blond was evolved above the fiftieth parallel. By blonds are meant yellow-haired people; rufousness is a transition stage between brune and blond.

The natural geographical position for the black man is from the equator to the thirtieth parallel of north or south latitude. This line to the north passes through Cairo in Egypt, and across the upper part of the Sahara Desert. In America it runs through northern Florida, southern Louisiana, the lowest third of Texas, and northern Mexico.

From the thirtieth to the thirty-fifth parallel is the zone of the brown man. In Europe only the islands of Candia and Cyprus touch the thirty-fifth parallel; but in America the thirty-fifth parallel runs along the southern border of North Carolina and Tennessee, through the middle of Arkansas, New Mexico and Arizona, and the lowest fourth of California.

From the thirty-fifth to the forty-fifth parallel of latitude is the zone of the brune Mediterranean type of white man. The forty-fifth parallel passes near Halifax, Bangor in Maine, Ogdensburg in New York, Ottawa in Canada, St. Paul, the lower border of Montana, and the uppermost third of Oregon. In Europe it runs near Bordeaux, Turin, through Bosnia, Roumania, and the Crimea. Madrid, Naples, and Constantinople are north of Philadelphia; New York City is as far south as Naples; Boston and Chicago as Rome; St. Louis as Athens.

The zone of the European blond is above the fiftieth parallel, which in America passes about 100 miles north of the United States. Christiania in southern Norway,

and St. Petersburg are at the level of Mt. St. Elias in Alaska and the southern end of Greenland.

If the United States and Europe are compared as regards exposure to sunlight, great difference is found. The continental territory of the United States, excluding Alaska, has had its present area since 1842, if we omit the negligible Gadsden Purchase. This territory lies between the twenty-fifth and the forty-ninth parallels of latitude. Europe is between the thirty-fifth and seventieth parallels; that is, between the upper border of South Carolina and the extreme northern end of British Columbia and Alaska.

Besides the light-zones, the heat-zones are to be taken into account in a consideration of the effects of climate upon man, but heat is by no means as important as light. The isotherm of 70 degrees Fahrenheit in July, which slants from northern Spain somewhat northeasterly through Europe, is altogether above the United States east of the Rocky Mountains; that is, the United States anywhere east of the Divide is hotter in July than northern Spain. Even the 80 degree isotherm, which runs along northern Africa, enters the United States as far north as Maryland and goes northwesterly. The 60 degree July isotherm, which marks the average heat of Great Britain and Scandinavia, in the New World passes through Newfoundland, and up toward the north of British Columbia. Mountainous elevations affect these isotherms, but this factor is not important here, because the people of the United States are mostly dwellers on plains. As the summer heat is greater than in Europe, the winter cold in America is severer. Above Europe is a partly thawed sea, above America hundreds of miles of ice-covered land. The European

mountains lie east and west and cut off the Arctic winds; the American mountains run north and south and let down the cold air.

A northern race, one whose natural habitat for thousands of years has been in a land protected from sunlight and heat by cloudiness and position, lacks skin-pigment to protect it from ultra-violet light, and it can not survive as a race in the south. On the other hand, a southern race can not survive as a race in the far north, because it radiates too much heat and is unable to withstand the cold. The Lombard and Goth, who migrated southward from some place near the Baltic, nearly as high as southern Alaska, to Italy and Spain, at the latitude of Virginia, disappeared in a few centuries, not by absorption, but by death. The Vandal, who went from the Baltic region as far as Africa, at the latitude of New Orleans, wasted away more rapidly. The blond prehomeric Greeks, who were invaders from the north, vanished like these Baltic types. The Scandinavian of the present day can not withstand the sun of Illinois: Chicago is as low as central Italy where the Lombard perished.

On the other hand, the centre of our negro population is now in northern Alabama, 476 miles south of where it was in 1790, despite the great migration of the negro toward the north since the Civil War. Similarly the negro does not flourish in Egypt. A migrant dark race, it may be said by the way, lasts longer in the north than a blond race does in the south, because temperature is less destructive than light.

The mortality of English children is two and a fifth times greater in India than in England, where there is more poverty among the whites. The death-rate of European children in the tropics is directly

proportional to the distance the original home of these children is from the tropics; in Maltese children it is 178; in Spanish, 180; in Italian, 194; in French, 225.2; in German, 273. There is twice as much insanity among American soldiers in the Philippines as at home; Englishmen in India get "Burmah head," with loss of memory and of power of mental concentration; they also become neurasthenic, as white men generally do in the tropics. The blonds suffer more than the brunes. Our black soldiers do not want to return from the Philippines, the mulattoes do. If space permitted a convincing cumulative argument could readily be drawn from medical reports concerning the rapid degeneration of white men in the tropics, especially from Major Charles E. Woodruff's book, *The Effects of Tropical Light on White Men.* What is true for the tropics holds also in a steadily decreasing ratio as we go northward from the tropics.

The races that first settled in the United States came from the north of Europe; they are white men, even blonds; but the sunlight in the United States up to North Carolina is too severe for the white man. Below this level to northern Florida is the brown zone, below that again is the black zone. From South Carolina to near Canada is the zone in light and summer heat for the olive-tinted white man, the Mediterranean type; and this man thrives here despite the winter, which is much more severe than it is in his European home. If a man from Scotland, which has an average of 259 cloudy days in the year, migrates to Yuma, Arizona, which has about 19 cloudy days annually, and sometimes a temperature of 120 degrees Fahrenheit, or to El Paso, Texas, which has about 28 cloudy days in the year, he is stimulated for a short

time, then nervously exhausted, and his family degenerates rapidly. Spaniards deteriorate rapidly in Central and South America. The Irish degenerate physically even in the northern United States. The history of 34 Irish families, which came to the United States above the level of Maryland after the famine of 1847 in Ireland, was examined with the following result: the parents were moral, industrious persons, and they were successful enough to properly clothe, feed, and educate their families. It is practically certain also, judging from intimate personal acquaintance, that there was no attempt on their part to avoid parentage. In these 34 families there were 241 children in the first American generation, an average of seven children to a family. There were only 309 children in the second American generation. Of the 34 families, however, one group of four families had 38 children in the first generation and 181 children in the second generation. This group shows a natural progression (even these four families, however, degenerate in the third generation); but if we omit these four families and consider the other group of thirty families, I find for the latter, 203 children in the first American generation, and only 128 children in the second generation; a very notable retrogression. In the first group of four families there were over four times as many children in the second generation as in the first, and if the same ratio existed for the other group, of thirty families, there should have been 812 children in the second generation, whereas there were only 128; a deficit of 684, instead of a great progression.

In the 34 families there were in the first American generation 113 males and 100 females who attained adult age. Of these men, 53, or over 46 per centum (almost

every second man) became drunkards; not occasional tipplers, but men that habitually and publicly became drunk. The original 68 parents were sober, abstemious people; I can find only two drunkards among them, and these became such in America; nearly all were total abstainers. Besides these drunkards, in that first generation, that is in 34 families, there were 16 insane, a few epileptics, and the group showed a decided tendency to chronic Bright's disease, tuberculosis and neurasthenia. The Irish do better in Canada despite the severe winters; indeed, our severe North American winters are one of our greatest blessings.

American energy, our rapidity of action, are not political gifts, nor wholly social imitative habits; they are in no slight degree an effect of solar overstimulation. This over stimulation is also a cause of our homicides.

In 1907, there were 365 known homicides in Pennsylvania (population in 1900, 6,302,115), a northern state, which has better rural police protection than any other state, and a fair enforcement of capital punishment. In England and Wales (population in 1901, 32,526,075) there were only 317 homicides in the same time. In that year 8,760 homicides were reported in the United States. If we compare the United States with England and Wales there should have been at the most thrice 317 homicides, but there were over twenty-seven times 317. There have been 45,000 known homicides in the United States during the past five years; and like the suicides, these murders are most prevalent during the months which have the most and the brightest sunlight—heat is not so potent an irritation as light in producing the nervous excitability which leads to murder; nor is

the southern European immigrant at fault in this condition of affairs.

The entire matter also of American literature and the other fine arts is influenced by this physical force of sunglare. Art is impossible without imagination, and it is a commonplace of psychology that imagination is inhibited in action by nervous overstimulation.

The climate of the United States, then, is very trying upon people who come from northern Europe, and the excessive sunlight is the detrimental factor. The mean annual quantity of injurious sunlight in the United States is apparently increasing as a result of deforestation. Deforestation affects the rainfall and the snowfall with the accompanying cloudiness, and the average volume of rivers. The territory of the United States east of the Mississippi, which a few generations ago was almost a continuous forest, is now bare.

The conclusion is that people of northern European origin should in America avoid the sunglare as much as possible. Their vacations should be spent in woods, not in the light of the seashore, and they should sleep as long as possible to restore nervous strength. American physicians have long known that nervous patients do badly at the seashore, but they were not aware of the cause of this phenomenon.

We should plant shade-trees in all our cities, and remove enough of the pavement to let these trees grow. Many old families in New England towns owe not a little of their longevity to their shade trees. Our healthiest folk are in the northwest where there are most clouds. We must get away from the erroneous traditional opinion, brought here from cloudy northern Europe, that sunlight is good for us: in measure it is, in excess it is fatal.

ALCOHOL IN THE TROPICS AND AMERICAN SCHOOLS OF TROP- ICAL MEDICINE.

BY

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In a paper on Tropical Subjects published in the Philadelphia Medical Journal, April 7, 1900, there was considerable evidence adduced to show that in the exhaustive conditions of the tropics a little alcohol was necessary. The Boston Medical and Surgical Journal, in commenting on the matter June 21, 1900, said that "the claim that the use of alcohol is desirable in the tropics is refuted beyond the possibility of discussion." Nevertheless the discussion is still going on in spite of its impossibility, —and that too in the London Journal of Tropical Medicine, but curiously enough its general trend is in the direction of the desirability of alcohol, although now and then someone asserts that the evidence shows that soldiers do not need alcohol "in any form or in any quantity under any circumstances that may occur in military affairs." (J. A. M. A. Aug. 29, 1908.)

In the issue of the Tropical Journal of July 15th, the latest article is by an Engineer whose work took him into the jungle where the laborers were compelled to endure adversities from which they are guarded in settled tropical places by sanitary appliances both thorough and complete. He, of course, took all known precautions and his men escaped with a good record of health, and he explained the rules which guided him,—among others the use of alcohol in a manner now being pretty generally recognized as proper.

"To men accustomed to a moderate amount of liquor at home, and a moderate amount abroad, preferably 'London Gin'."

"To teetotalers—a continuance of teetotalism if they are not unduly weakened thereby."

"Those accustomed to drink in moderation should not suddenly become total abstainers on arriving at a fever zone."

"We did hope that the American Society for the Study of Inebriety and Alcoholism would help us but we cannot trust anything it says, as it is not interested in the scientific truth—not in the least—for the central fact about which this society has grouped all its studies, has been that alcohol is a poison in the broad sense, and the injuries which follow are veritable diseases." (N. Y. Med. Rec., Aug. 1, 1908). Its conclusions may be inimical to health in the tropics, for studies to support a dogma are highly dangerous.

In the Boston Medical and Surgical Journal of August 13, 1908, there is an editorial approving the suggestion of Dr. E. N. Tobey (Harvard Graduate's Magazine) that there should be a department of tropical medicine in all medical schools. The editorial refers to the great ignorance among American practitioners, and particularly those in Boston, for Dr. Tobey in less than a week found five cases of Filariasis in the immediate neighborhood of Boston though it had been said that only two cases of the disease had been reported at the Boston City Hospital in ten years. It seems nevertheless, that the above alcoholic opinion shows that the place in the civilized world most in need of knowledge of tropical conditions is the editorial office of the Boston Medical and Surgical Journal. Boston cannot be considered a favor-

able environment for tropical studies if the erudite Boston editor is to receive new investigations with the assertion that they are already "refuted beyond the possibility of discussion." Military sanitarians must reject the output of even Harvard itself, for the last work on "Climate" from the pen of Prof. Ward of that University is so full of misinformation as to tropical diseases and hygiene as to be positively inimical to the welfare of the Army.

In our efforts to find the reason for the dreadful rapidity of tuberculosis among soldiers in the tropics, we are met by the old, old opposition. The facts can be found in the N. Y. Medical Journal of Sept. 12, 1908, and it is amazing that such tropical studies should be compelled to pass a censorship of men knowing nothing of the matter at all. It is now in order for the editor of the Boston Medical and Surgical Journal to assert that "The claim that unstinted sunshine can be injurious in tuberculosis is refuted beyond the possibility of discussion and no further investigations will be tolerated."

There are three American schools of tropical medicine already in existence, those of the Army, Navy and Marine Hospital service, at least the Army and Navy schools and the Marine Hospital laboratories may be considered such, for they devote much attention to tropical subjects, as these three classes of governmental doctors must serve in the tropics a great deal of their time and are now trained to it.

There is no doubt that tropical subjects should also receive special treatment in all medical schools, particularly for urban physicians whose location will bring them patients who have been in the tropics but the vast majority of physicians will never

see a tropical case and few of them will have the time, patience and opportunity to study such diseases with the particularity needed for success in diagnosis and treatment. In Great Britain the case is different, owing to the constant contact with the tropics in her enormous trade. The merchants and manufacturers themselves started the movement for a tropical school to safeguard their business. It is doubtful whether our business men except in the extreme South are sufficiently interested in the tropics to do likewise, so that such support cannot be expected in the endowment of tropical teaching and research in America. The subjects are of vital importance to only one large class—the government agents on duty abroad. On account of our public duties as physicians, municipal sanitation is a matter of much importance for our medical schools to take up, but experience shows that even in this, the average student has no time. I would therefore strongly advise that we all appeal to Congress to establish these three governmental institutions on a much more extensive basis, so that a continuous investigation may be made of all tropical matters connected with soldiers and sailors and not depend for approbation upon the editorial rooms of the Boston Medical and Surgical Journal.

The Menopause.—The normal menopause in a healthy woman becomes established in one of three ways: 1. The periods become less and less in amount until the vanishing point is reached. 2. The periods become more and more widely separated and disappear. 3. Menstruation goes on without any appreciable change until, after a perfectly normal and usual period, it fails to reappear. Needless to say, the first two methods may be blended.
—Craig.

ARE WE BEING "DOCTORED" TO DEATH?

BY

H. SHERIDAN BAKETEL, M. D.,
New York.

How long, Oh Lord, how long, before this indiscriminate conferring of the degree of "doctor of something" will cease?

The title, once honorable, is rapidly becoming a misnomer, and unless a halt be called it will become as sounding brass or a tinkling cymbal.

What does "doctor" stand for? It comes from the Latin word *doctor*, meaning teacher. According to the Standard Dictionary a doctor is "a practitioner of medicine and surgery."

1 (U. S.) A person empowered by a regular technical school to practice medicine and surgery.

2 In loose usage, any person whose occupation is medical practice.

3 (Great Britain). One who has the diploma of doctor or licentiate of the College of Physicians. A doctor may also be "a person who has received a diploma of the highest degree, as of divinity, law, etc., as an evidence of his learning and ability to teach."

Therefore, we are led to believe that a doctor must either be a regular qualified physician, or must by his superior learning be well fitted to teach. Unfortunately, the original meaning of the word has been lost sight of.

Until the march of progress became such a fast moving procession that one has difficulty in seeing it owing to the dust created by its own breaking of the speed limit, the doctor was the family physician, a gentleman wise unto his day and generation, possessing an abundance of that most

valuable asset, unfortunately unknown to some modern practitioners—common sense. He was the only doctor known to the community, save when in rare instances a learned clergyman had been given the honorary degree of doctor of divinity in recognition of great service to the church or humanity or as an evidence of his deep erudition.

But alas, we have fallen upon evil days. Besides the pests of gypsy moths, mosquitoes, fleas, blatant politicians, demagogic reformers and omnipresent near-novelists, we have the "doctor" pest and the increase in this particular brand of *genus pestis* appears to be without end.

The brands of doctors inflicted upon an unsuspecting and long suffering public are almost as numerous as the sands of the seashore. Aside from the real simon pure, bonafide doctors, we have doctors of divinity, doctors of philosophy, doctors of mathematics, doctors of veterinary medicine, doctors of laws, doctors of jurisprudence, doctors of civil law, doctors of canon law, doctors of science, doctors of engineering, doctors of literature, doctors of sacred theology, doctors of oratory, doctors of library science, doctors of science and didactics, doctors of music, doctors of pharmacy, doctors of pedagogy and many others. Besides these we have welcomed to our menagerie of doctoral erudites a choice selection of corn doctors, dog doctors, beauty doctors, bird doctors, foot doctors, "eye" doctors, and more whose name is legion. Indeed the title has quite lost its original significance. Most colored preachers, grammar school principals, college tutors, male church organists, druggists and eye refractionists feel insulted unless addressed by the magic appellation "doctor."

able environment for tropical studies if the erudite Boston editor is to receive new investigations with the assertion that they are already "refuted beyond the possibility of discussion." Military sanitarians must read the output of even Harvard itself, for the last work on "Climate" from the pen of Paul Ward of that University is so full of misinformation as to tropical diseases and hygiene as to be positively harmful to the welfare of the Army.

In our efforts to find the reason for the prevalent frequency of tuberculosis among soldiers in the tropics, we are met by the usual opposition. The facts can be found in the N. Y. Medical Journal of September 1906 and it is amazing that such medical societies should be compelled to pass a resolution of their knowing nothing in the matter at all. It is now in order to the editor of the Boston Medical and Surgical Journal to assert that "The claim that tuberculous disease can be imported in tropical climates is refuted beyond the possibility of discussion and no further investigations will be necessary."

There are three American schools of tropical medicine already in existence: those of the Army, Navy and Marine Hospital Service; of the Army and Navy schools of tropical medicine; and the American Tropical Medicine Association.

The Army and Navy schools of tropical medicine are a great deal of trouble and expense.

There is a school of tropical medicine at the Marine Hospital Service, and a school of tropical medicine at the Army Medical School. The Marine Hospital Service school is a great deal of trouble and expense.

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THE AMERICAN MEDICINE
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DATE?"

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If these ideas could be carried out, the
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THE DIFFERENCE.

"Twixt optimist and pessimist
The difference is droll—
The optimist sees the doughnut;
The pessimist sees the hole.

"Twixt optimist and pessimist
You are wrong upon my soul—
The pessimist eats the doughnut;
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—Wilber D. Nesbit in "The American Printer."

an aspiring popu-
carries one, the in-
broad clerical, judicial,
the other. It is mere-
methods of advertising.
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degree to the donor some-

As long as we are in the wholesale doctoring business why not do it up with that neatness and despatch so characteristic of Americans, whether dealing in pork, scrap iron or alleged learned degrees? Let us indulge in an extended doctoring debauch, sufficiently prolonged to satiate every person harboring honorary degree bees in their intellectual bonnets. Let us have doctors of blacksmithy, doctors of carpentry, doctors of all trades, doctors of stenography, doctors of farming, doctors of ditch digging, *et cetera ad infinitum et ad nauseam*. I know many artisans much better qualified by natural attainment for doctorial adornment than some men upon whom the title has been conferred.

Not long since, I met in company with several gentlemen, a pompous person of benevolent mien, bearded and bespectacled, arrayed in the once conventional medical attire, frock coat and top hat, who was introduced as Doctor Blank. During a general conversation, when the man was asked where he practised, he graciously handed out a card, which made known to an admiring and expectant populace that at last John Blank, O. D. had come into his own. I demonstrated my crass ignorance by asking the meaning of the mystic symbols, O. D., and was informed that they stood for his degree, doctor of optics. His alma mater was doubtless a correspondence school where after six weeks of nerve racking study and the payment of certain pecuniary gratuities, one is granted a long distance diploma of sufficient dimensions to paper the office of the optical occult oracular. Together with this, the holder is also accorded the privilege of giving, when occasion demands, the college yell:

Rah! Rah! Rah!
Rah! Rah! Rah!

Postage stamp! Postage stamp!

Rah! Rah! Rah!

It is such fakirs as this, who are doing so much to minimize the real worth of a doctor's degree in the eyes of the people.

As has been said, there was a time when the letters D. D. stood for a tangible something. Today they mean almost nothing. Most of our cross road parsons, not to mention the city divines (clergymen graduate into the latter class after becoming pastors of parishes in incorporated cities) are called "doctor." So too, one will find that the pastors of Mount Zion African M. E. Church and the Hope Colored Baptist Chapel are Rev. Samuel Johnson, D. D. LL.D., and Rev. William Brown, Ph. D., D. D., respectively. It surely looks as if it is bad form these days to be a wearer of the cloth unless one possesses a doctored attachment to one's surname.

Recently a clergyman introduced a physician to a layman as a "medical doctor." In some astonishment the "introducee" remarked that he thought all doctors were "medical doctors." The clergyman, making visibly manifest the limit of his chest expansion, remarked that he was a doctor, a doctor of divinity instead of medicine. He seemed offended when his lay auditor said the ministerial kind of doctoring might be all right but he felt it would be found wanting in a hard case of colic or in a broken jaw.

Occasionally a clergyman can be found who realizes the meaninglessness of such titles. The writer has in mind one of the most capable college presidents in the country who possesses several honorary degrees, but who always refers to himself as "Mr." and has that prefix alone upon his calling cards. Such examples are distinctly refreshing.

It is difficult to find a young college instructor who does not adorn himself with a Ph. D. He insists on being properly addressed, despite the fact that he is lovingly known among the godless youth in his classes as Fishy, Skinny, Bull, Pinhead, or by some other edifying and endearing appellation.

The doctor of pharmacy declines to sell you a bottle of soothing syrup or ten cents' worth of worm tablets unless you say "please doctor." Call your daughter's violin instructor "doctor" and he will send you free tickets to his \$6.-for-the-season musicales. Address the gentleman who is teaching your ten year old hopeful how to shoot mentally as "doctor" instead of "professor," and the offspring's steady promotion is assured, and so on through the list.

Why this sudden titular craze? It is due in large measure to the scores of jerk-water colleges, in reality post-graduate high schools, scattered throughout the country. These institutions which have cajoled legislatures into granting them charters permitting the privilege of conferring all sorts of honorary degrees, feel the necessity of making use of the degree-giving function in order to acquaint the proletariat with the name and merits of those temples of learning. The proprietor of Doctor Curem's Capsules for Colicky Children advertises his wares on bill boards which profusely adorn the landscape. Squashville college confers the degrees of Ph. D., D. D., L. L. D. and other D's upon an aspiring populace. The bill board carries one, the intellectual dome, and broad clerical, judicial, or pedagogical back the other. It is merely a difference in methods of advertising.

Oftentimes a pecuniary gift to an institution of learning is later followed by an honorary degree to the donor some-

thing which smacks strongly of commercialism. A man pays 42c. to his grocer and receives a dozen newly laid Wyandotte eggs, or he gives Jayhawk University \$5,000 for a scholarship and gets an L.L. D. It would look as if, in purchasing the latter commodity, he got the small end of the bargain, for there is far less nourishment in the bit of parchment than in twelve newly laid Wyandotte eggs.

The American idea of conferring honorary degrees is radically wrong. With most thinking people an honorary degree means no more than a bilious headache. Neither is to be taken seriously. Degrees of every sort should be earned by good solid work. The doctor of medicine spends four years of the hardest kind of study before he receives the coveted piece of sheepskin. The doctor of divinity, laws, philosophy, or what not, should put in two years or more of post-graduate study followed by examination, before the degree could be conferred. It ought also to be a requirement that every candidate for a doctorate should be the possessor of a bachelor's degree in arts, science, philosophy or literature.

If these ideas could be carried out, the doctor's degree would possess proper significance. It would be the badge of intellectual attainment, and not the hailing sign for chiropodists, spectacle fitters, freckle removers and other of that ilk.

THE DIFFERENCE.

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—Wilber D. Nesbit in "The American Printer."

**REPORT OF A FUNDAL CONDITION
SIMULATING DUPLICATION
OF THE DISK.**

BY

JOSEPH W. SHERER, M. D.,

Kansas City, Mo.

In April, 1907, I was consulted by a man, E. O. M., aged 42 years, for headache, eye tire and failing vision. He was a railway laborer and consulted me on the advice of a colleague who had prescribed quinine for malaria. Tests showed the degree of visual acuity to be two-thirds in each eye. Near vision equalled type 200 at thirteen inches. Upon correcting his refraction it was found that +.50 D. brought the vision to 6-6 with each eye and by adding +1.50 D. near vision equalled type 50 at thirteen inches. Color vision was normal. The visual fields were of normal expanse and presented no anomaly other than an enlargement of the Mariotte blind spot of the right field to about 8 degrees instead of the normal 4 degrees. Testing the extrinsic ocular muscles revealed nothing unusual. The intra-ocular tension and the pupillary reactions were apparently normal.

No disease of the ocular structures nor of the tutamina was noticeable but inspection of the right ocular fundus with the ophthalmoscope revealed an anomalous and extremely interesting condition; in a word, nothing less than an appearance of two optic disks partly overlapping each other, instead of one. (See illustration). No other deviation from the normal was discoverable in the right fundus. The left fundus looked normal. A detailed study of the right fundus by the direct and the indirect methods revealed several interesting things. About two-thirds of what appeared to be a normal disk was visible. This was the lower temporal portion of the area. It presented for

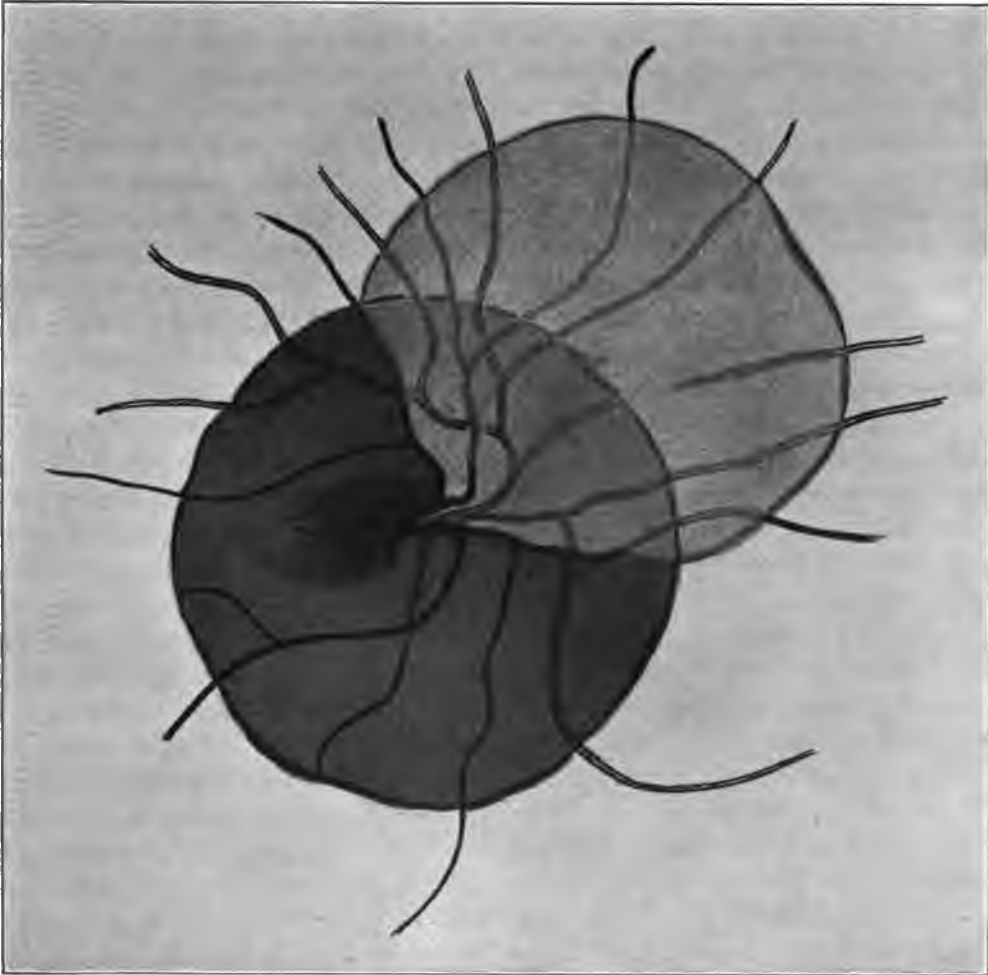
examination the usual number of arteries and veins of normal contour and distribution. It was of a pearly color, with a faint capillarity. Where the vascular trunks rose from the depth of the nerve a well marked physiologic excavation could be seen. This excavation, or cupping of the nerve head, was typical of the condition sometimes described by histologists, viz.: that the nerve fibers are piled up to a greater depth at the temporal side of the disk and make an angle of nearly 90 degrees in turning from the retina into the nerve. Hence the side of the central cup toward the macula and walled by the macular bundle is normally practically vertical to the eye of the examiner. The other side of the excavation, the mesial side, in this case presented a gentle declivity. This, too, is the typical conformation, for the deeper nerve fibers of the nerve fiber layer pass further to the center of the nerve before turning into the nerve than the more superficially lying nerve fibers. Hence the gradual slope of this side of the excavation. In this case the porosity of the cribriform plate was not discernible in the depths of the cup.

Bordering upon and partly overlapping the upper nasal part of the disk was an area of about the same size, shape and color, but not bearing any vessels upon its surface. From its edges however, five arteries and three veins, emerged upon the retina. To the ordinary ophthalmoscopic view these vessels were not visible upon the pearly white area from which they emerged but by deeper focusing with a lens the outline of all these vessels could be rather dimly traced to their origin from the central retinal artery and vein. The line of demarcation between the false disk and the retina was just as distinct as that between

the true disk and the retina. On account of the sameness in size, shape, color, and especially on account of the distinct outline the simulation of a double disk was very striking. Careful study of the minutiae led me to consider this to be a case of aberrant growth of medullary nerve sheaths.

medullary sheaths extending transversely from each side of the disk so that this could be roughly compared to a bat with its wings spread out.

An area of medullated nerves in the retina glistens and with its peculiar ragged or fringed edge suggests a blaze of flame.



Duplication of the Fundus.

This condition is only moderately rare in man while in some lower animals it is very frequent and in others, notably the rabbit, it is constantly and normally present. I have examined the eyes of a series of rabbits and found in each a large area of

The frayed or frazzled edge looks somewhat like a fish's fin. This frayed or fringy edge can ordinarily be depended upon as a diagnostic point of differentiation between this condition and other conditions with which it is liable to be confused, viz.: areas

of chorio-retinitis, of fatty deposits, or of albuminuric retinitis. In the case related above this characteristic was conspicuous by its absence. The edge of the area of medullated nerves was as sharply defined as the edges of the disk itself. According to Fuchs, and as I have myself observed, when these areas of medullated nerves occur at the edge of the disk, or surround it, the disk looks reddish, or even dark red, by contrast. In this respect the above case seems exceptional.

These areas of medullated nerves in the retina usually border upon the disk but sometimes occur at other places in the fundus. They are usually snow white and glistening and possess a fine striation which is especially noticeable at the edge where the medullation thins out and looks frayed. The retinal blood vessels sometimes lie on the surface of the opaque fibers like threads of scarlet on a bed of snow and sometimes run beneath the surface and are more or less hidden by the fibers.

Opinions differ as to the effect upon vision. "The existence of opaque nerve fibers does not influence vision."—(*Ball*.) On the other hand Lang states "a scotoma in the field of vision corresponds to the opaque area; and in an extreme case of the defect the eye may be amblyopic." In this case a scotoma at the edge of Mariotte's spot marked the presence of the opaque area of fibers. Since light must pass through the fiber layer to affect the rods and cones and since medullary sheaths are about as opaque as porcelain it is hard to see how they could fail to influence vision just in proportion to the extent of the area of medullated nerves. The old term "retained medullary sheaths" appears to me to be a misnomer. "The condition is due to the retention around some of the axis

cylinders of the medullary sheaths, which normally cease at the lamina cribrosa." (*Norris and Oliver*). "The optic nerve fibers lose their medullary substance before passing through the lamina cribrosa," (*Fuchs*). The nerve fibers should be considered as receiving medullary sheaths on leaving the eye ball on their course from the retina to the brain. Nor is it strictly correct from a histological point of view to regard the optic nerve as an ordinary peripheral nerve for structurally it corresponds to a cerebral commissure or tract.

The term optic tract should designate the entire pathway from the thalamus to the end organ. Like the fibers in the white substance of the brain and spinal cord these fibers are totally devoid of neurilemma. This deficiency is apparently compensated for by a slight condensation of the neuroglia around the medullary sheath.

Developmentally, too, the optic nerve resembles a commissure or tract. The optic vesicle grows laterally from the third ventricle upon a pedicle, the optic stalk. During the latter part of the second month axones spring from the ganglion cells of the retina and converge to the extreme median end of the choroidal tissue of the eye ball, perforate the pedicle to reach the brain and constitute the so-called optic nerve and tract. A genuine commissure is thus formed comparable to the cerebellar peduncles for example. A few fibers grow centrifugally from ganglion cells in the brain to the retina, terminating apparently in conjunction with association amacrine cells in the inner nuclear layer; but a vast majority of the nerve fibers grow centripetally. For from one to two months these fibers remain naked axones and then about the twentieth week a thin medullary insulation begins to form, according to Wlassak, by

the formation of droplets of myelin from the blood, or from the fluid which begins to surround the fibers at this time.

The myelin is supported by a delicate reticular frame work, the neuroglia, and is a fatty substance with a very high index of refraction; hence its opaqueness. It is, I believe, a universal law that all nerve fibers lose their medullation and neurilemma as they approach their termination, but here they receive no medullation at their origin. The requirements of vision demand that sheaths be absent and normally they remain absent. Several interesting things may be noted. We find that the seeing part of the eye is really a portion of the brain which has grown to the surface and maintains connection with the brain by a real commissure. The connecting nerve fibers, contrary to the rule elsewhere, do not grow a medullation at their origin, and again when they do grow a medullation here, as is the rule with other nerve fibers in general, the function is destroyed.

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REVIEW OF RECENT LITERATURE ON DERMATOLOGY AND SYPHILIS.

BY

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FAVUS CORPORIS. The infection of the general cutaneous surface by the *Achorion Schonleinii* is of very unusual occurrence, particularly in those of American parentage. If the body is attacked there are usually but a few typical, sulphur-colored scutula present. The body is hardly ever attacked primarily, but is secondary to the invasion of the scalp. The nails also may be involved from scratching the lesions on the scalp.

Stout (*New York Medical Journal*, June 20, 1908) has recently described two interesting cases, in which favus had attacked the general cutaneous surface. In one case the disease involved fully one-half of the body, the eruption being most marked on the scalp, the extensor surface of the arms and the legs, the buttocks, and the shoulders. The cheeks, chin, the ears, and the flexure surface of the arms and the legs were also attacked. All of the finger nails showed characteristic involvement. This disease had first appeared on the scalp two years ago, when the boy was twelve years old, six months ago it first appeared on the body. The other case appeared in a girl of thirteen, three weeks previous to her first visit to Dr. Stout. It was not so extensive as the first case described, because of the short duration. The eruption was limited to the flexure surface of the right forearm, and consisted of a dozen typical scutulae. It is a noticeable fact that the scalp was not attacked in this second case. The typical fungus, the *Achorion Schonleinii*, was found in each case; the disease was successfully inoculated upon a mouse from one of the cases. Each patient was the child of American parents. Favus had not been transmitted to any other member of their respective families.

ERYSIPLOID. Comparatively few physicians are familiar with the name "erysiploid," and still fewer are able to recognize its clinical features. Only a few cases of the disease originally described by Morrant Baker, and by Rosenbach are on record. Jopson (*Amer. Jour. Med. Sci.*, May, 1908) has recently written an instructive article on this subject, describing thoroughly aetiological causes, the clinical characteristics, and the treatment of the dis-

ease. Three cases are described in the paper, all occurring in laboratory workers. In each case the infection occurred on the hands, through a minute abrasion, while performing an autopsy. Jopson mentions the well-known fact that the disease usually occurs in fishmongers and butchers. The aetiologic field becomes much broader when, as is pointed out in the article, the cadaver may be the source of infection.

THE CLINICAL AND PATHOLOGICAL ASPECTS OF RODENT ULCER. As rodent ulcer has its origin in the skin, it should be classed under dermatology. Although it is frequently treated as a benign condition, because of its long duration in a stationary state, yet it may undergo a rapid and malignant change. Guthrie McConnell has recently written (*Amer. Jour. Med. Sci.*, May, 1908) an instructive article on this subject. The history of the disease is first described and its various characteristics. He mentions the following sources, according to Bland-Sutton, as the origin of rodent ulcer: Sebaceous glands; sweat glands; the hair follicles; the outer layer of the root sheath of a hair; epithelial remnants in the course of the facial fissures; vestiges of the tear-pits of ruminants; and occasionally a hairy mole. Sixteen cases of the condition are described, representing, clinically, almost every degree of malignancy. It is to be noted that five of these cases developed upon moles on the face. Although it may be some years before a change is noted in the lesion, yet the malignancy may be such that all the contiguous tissue may be destroyed, and death result. Men are more frequently attacked than women, a little over sixty-two per cent., of these cases occurred in the male sex. The

average duration of these cases was ten years, the malignancy being slower in the female sex. Women are apparently attacked at an earlier age. The disease was limited to the white race. Eight of the sixteen cases began in the neighborhood of the eyes and the nose, particularly near the inner canthus, while of the others, three appeared behind the ears or upon the neck, with the remaining five scattered over the face. A biopsy was made in each case and the pathological findings were very similar. In thirteen cases the formation of the cell nests was quite characteristic, the margins however were irregular papillary in outline. The majority of the tumor cells contained rather long, narrow, spindle-shaped nuclei that stained deeply. The cells were arranged in parallel rows or a columnar fashion. Three specimens showed sebaceous glands in the area of the growth and thirteen of the sections exhibited them in the immediate vicinity. Sweat glands were also present in most of the specimens in the tissues adjoining the growth. The lymph nodes were infiltrated in but one case.

SYPHILIS COMMUNICATED IN ASSAULT AND BATTERY. Syphilis extragenitally acquired is a subject on which much has been written, but unusual sources of infection are still recorded. Comparatively little attention has been called to assault and battery as a possible origin of syphilis. Watson (*New York Medical Journal*, Aug. 1, 1908) has reported three cases of syphilis arising from this source. The initial lesion was situated on the dorsal surface of the hand in one case, on the ear in another, and on the scalp in the third. The source of infection in two of the cases was the blow of a fist, and in the other a bite from the

assailant. Other cases of like character are cited in the paper.

TELANGIECTATIC LESIONS OF THE SKIN OCCURRING IN THE SUBJECTS OF GRAVES' DISEASE. Hyde (*British Journal of Dermatology*, February, 1908) has recently called attention to the interesting skin conditions which accompany exophthalmic goitre. The most unusual of these consist of minute telangiectases, occurring almost entirely upon the face. The other skin affections mentioned are, pruritus, hyperidrosis, hydrocystoma, erythematous flushing, scleroderma, and myxoedema. Four cases of Graves' disease are recorded in the paper, all with small telangiectases, chiefly on the face. In all four cases the face was attacked, in two, lesions were seen on the neck and upper chest, and in one, on the lip. The capillary dilatation covered areas from pin-head to split-pea in size. There was a purplish color to the eruption which disappeared under pressure. Subjective symptoms were absent. In each case exophthalmic goitre was positively diagnosed. But one other case, according to Hyde, could be found in medical literature.

UNIVERSAL DERMATITIS OF CHILDREN AT THE BREAST. So many supposedly new diseases are being described under the dermatological heading, that the classification, the difference and the resemblance of the diseases of the skin has become extremely difficult. Leiner (*The British Journal of Children's Disease*, June, 1908) has described under the title of "Erythrodermia Desquamativa," a supposedly newly described disease of the skin. This disease attacks infants, mostly breast-fed, two to three months of age. Leiner has seen during the last five years

forty-three cases of this special type, forty-one being nourished at the breast and two with the bottle. Twenty-eight of these cases were cured and fifteen died from the disease. It usually occurs at the end of the second or the beginning of the third month. At its height it presents the appearance of a universal dermatitis, the scalp and the eyebrows being covered with thick, yellow, and fatty scales and crusts. The trunk is red and covered with whitish-grey opaque scales, the dorsal aspect of the extremities is more scaly than the flexors; the hands and the feet are red. The nails show various deformities, transverse and longitudinal grooves, small prominences and cavities of irregular form. The nail-bed is hyperkeratotic, causing an abnormal convexity of the nails. Physical examination shows normal organs. There is slight swelling of the superficial glands. Itching is practically absent. Digestive disturbances are however noted. In the majority of cases the disease of the skin after reaching its height was cured in a few weeks. The child however loses weight and it may be some weeks before the physical condition is normal again. In the fatal cases, in spite of the breast feeding, the intestinal condition becomes more severe and emaciation is very marked. The child becomes collapsed, and the face and the extremities become cyanosed. The whole skin becomes parchment-like and rhagades are abundant, chiefly around the mouth. Post-mortem examination shows degeneration of the heart muscle, fatty degeneration and infiltration of the liver, and catarrhal changes of the intestinal mucous membrane. The histological changes in the skin consist in a dilatation of the vessels in the papillary layer and a slight augmentation of leu-

cocytes in the same area, a slight inflammation and oedema of the epidermis, and a parakeratosis. Leiner then describes the differential diagnosis of the disease, differentiating it particularly from dermatitis exfoliativa. The possible aetiological factors, and also treatment, are mentioned.

IDIOPATHIC MULTIPLE HEMORRHAGIC SARCOMA. Kaposi in 1872 first called attention to an unusual and remarkable affection of the skin characterized by the occurrence of deeply pigmented infiltrated patches and small tumors, situated almost invariably upon the extremities, followed after several years by visceral metastases and death. About one hundred cases have been reported in all, De Amicis having seen somewhat over fifty of these. Two excellent papers have been written on this subject during the last year, the first by Hartzell (*The Journal of Cutaneous Diseases*, March, 1908), and the second by Lieberthal (*The Journal of American Medical Association*, October 10, 1908). The patient under Hartzell's care was sixty-nine years old, a traveling salesman by occupation. The disease originally started fourteen years previously, with intense itching at the root of the toes and smooth pigmentation of the dorsum of the foot, and had remained limited to the left extremity until two years ago, when it began to appear on the right foot and leg. At the present time both lower legs and feet are involved by the bluish, pea-to-hazel-nut-sized, firm, smooth nodules. The disease is limited to the legs and feet, excepting one thumbnail-sized patch on the inner surface of the left thigh. The case described by Lieberthal occurred in a male 49 years of age. The patient suffered with tabes dorsalis, aortic insufficiency, and emphysema, he was

an excessive smoker and a habitual drinker. The disease started in 1891, when a small red swollen spot appeared on the dorsal surface of the right hand, spreading slowly over the hands and the fingers. Five years later similar spots appeared on the right and soon afterwards on the left thigh. Three years later the feet were attacked. In 1901 the latest lesion appeared on the dorsum of the left hand. There are about a dozen nodules in all, from pea to half-dollar sized, reddish-purple in color. In the median line at the junction of the hard and soft palates were three pin-head-sized nodules, bluish in color, and perceptibly firmer to the touch than the surrounding mucosa. The lymphatic glands were not enlarged. The histological examination in most of these cases is practically the same, the epidermis being about normal with the exception of thickening of the corneous layer. The interpapillary projections and papillae are mostly obliterated. The corium is thickened and shows a large number of cavities, which are lined with endothelium. Small spindle cells are abundant. The blood vessels in the peripheral parts of the nodule show thickening of their walls, while those in the central parts are torn. The connective tissue is coarse and abundant. The elastic tissue is either absent or scanty. Some of the cavities are filled with blood. Large masses of shiny yellow pigment may be seen between and within the cells. Very few cases of this disease have occurred in those of American parentage. Most authorities consider that the disease is closely related to true sarcoma, it is histologically at least, notwithstanding its slow course. Etiology, treatment, and prognosis are also discussed in both papers.

ETIOLOGY AND DIAGNOSIS.

The Primary Localization of Tuberculosis in Children.¹—The data so far collected appear to point toward the following conclusions as probable: First, that the frequency of pulmonary tuberculosis in children is much greater than was formerly supposed. Second, that the lung is the most frequent site of tubercular involvement in children, as in adults. Third, that whatever the port of entry, the lung suffers most severely and most frequently. Fourth, that instead of tuberculosis having a special preference for the bones, joints, and glands in childhood, the tuberculous process in these regions and tissues would appear to be secondary to the involvements of the lung and to represent a residual stage of a generalized infection. Fifth, that it would appear probable that even the glandular forms of tuberculosis do not represent an earlier or milder form of the infection, but are secondary to a pulmonary involvement. Sixth, that the moderate but appreciable degree of immunity against pulmonary tuberculosis possessed by children who have manifested osseous, articular, or glandular forms of the disease is possibly to be interpreted on the theory that they have already survived a considerable degree of pulmonary involvement. Seventh, that such immunity as may be acquired by civilized races is probably like the immunity of the negro races to malaria—the result of the survival of attacks of the pulmonary form of the disease in childhood. Lastly, that the field in which the decisive battle of our future campaign against tuberculosis must be fought is the home; our chief enemy, infection in early childhood; our heaviest gun and our most crying need, camps, “preventoria,” for the reception and cure of infected or exposed children before they have become unmistakably tuberculous.

The Etiology and Diagnosis of Spastic Constipation.²—Dr. Singer, in recording his own observations, differentiates two forms of spastic constipation, a symp-

tomatic variety occurring in association with diseases of the intestines or other abdominal organs, and an idiopathic or nervous form occurring in association with neurasthenia, hysteria, and other conditions of the nervous system and in some persons independently. The symptomatic form occurs not only in connection with local lesions of the intestine but also with chronic disease of the internal genital organs of women, with chronic disease of the prostate in men, and with local disease of the rectum, such as fissure, hæmorrhoids, and proctitis, in both sexes. A similar condition is said to be a constant association of nephritic colic and to be not infrequent in cases of hyperchlorhydria. The symptoms of spastic constipation differ widely in different cases, and many of them are the result of the coincident dyspepsia and neurasthenia. In regard to defæcation the patients complain of the defective action of the bowels and usually notice that the amount evacuated is very small. The act of defæcation is associated with great straining and exertion. There is frequently a false desire, causing ineffective attempts to effect the emptying of the bowels. The patients often complain that they can feel the fæcal matter in the intestine but are unable to void it, or they sometimes have frequent small evacuations at short intervals—a condition which is termed “fragmentary evacuations” by Boas. This is compared to frequency of micturition by Dr. Singer. On examination the abdomen is often found to be in a scaphoid condition, and on palpation sections of the large intestine may be found to be contracted to form cord-like masses. Sometimes the descending colon may be felt as a firm, sausage-shaped, cylindrical body, sensitive to pressure. More rarely the same condition may be felt in the right iliac fossa, but as a rule the cæcum is felt as an inflated, pear-shaped, elastic body. These areas of contraction may be felt to alter in position and may be noticed in one part of the large intestine at one time and at another part on a subsequent examination. Dr. Singer states that the obstruction to the passage of the fæces may be so marked as to simulate intestinal obstruction—a condition which has been called by Leube “ileus spas-

¹Woods Hutchinson, A. M., M. D., New York. Read before the International Congress of Tuberculosis, October, 1908.

²The London Lancet, Sept. 19, '08, pp. 885.

ticus." It is always important to examine the rectum in these cases; in purely nervous cases no local condition is found sufficient to account for the symptoms. On using a bougie, after overcoming the resistance of the external sphincter and passing on the bougie a ring-shaped obstruction is encountered, the contracted internal sphincter, which Dr. Singer regards as the site of the chief contraction in these cases. The examination of the *fæces* is also important. Usually the quantity passed at each action of the bowels is small and it may consist of pulpy fragments and small lumps. Stools of small calibre, ribbon-like or thin as pencils and grooved, are very characteristic. Sometimes small cord-like mucous masses are passed and some degree of hæmorrhage occurs in certain cases, even in those of purely nervous type. The blood may be passed in larger or smaller quantities, generally at the end of defæcation, or there may be fragments of blood-stained mucus. In regard to the pathology Dr. Singer agrees with the view of Westphal that the spastic contracted condition of the intestine in the cases of nervous origin is due to a disturbed coordination of the muscular movements of the bowel. In regard to diagnosis, spastic constipation has to be differentiated from the various forms of colic, including lead colic, from gastric crises, and from intussusception and other forms of intestinal obstruction. The important features to recognize in this regard are the presence of sections of contracted bowel, the absence of pronounced meteorism and visible peristalsis.

TREATMENT.

A Treatment of Pneumonia.¹—Dr. Roux has treated for several years pneumonia in the adult and in children with fresh beer yeast, and with almost constant success. His method is as follows:—

(a) A tablespoonful of yeast, given in beer, three times a day for adults, and as many teaspoonsful for children.

(b) One to four leeches over the lesion.

(c) One to five-tenths of a milligram of digitalis.

(d) Syrup of belladonna to children; syrup of morphia to adults.

Purgatives, beef-tea, oranges, tea, coffee, a little wine and water, no milk.

After 48 hours convalescence commences.

Phenol in Dressing Wounds.¹—A recent article by Meyer quotes numerous authors and gives the impression that the use of phenol in weak solution is liable to be attended by untoward consequences. But an analysis of the reported cases shows, says Blake, that the strength of the solution, when known, always exceeded two per cent.; and as he further says every one should know that this is too strong to be used as a routine procedure, especially on fingers. In this connection, Blake calls attention to a popular fallacy, which he has found to be common among physicians; namely, that a teaspoonful of drug to a cup of water makes a two per cent. solution. The ordinary coffee cup or glass filled to the brim contains about eight ounces; the teacup somewhat less; and filled to within one-half or three-quarters of an inch of the top, as is customary, a "cup" contains about six to seven ounces. Furthermore, an ordinary teaspoon holds considerably more than a drachm, on an average about a drachm and a half. Hence, the careless doctor who prescribes a teaspoonful of pure phenol in a cup of water, supposing that he has ordered a two per cent. solution, may be surprised by a bad burn or gangrene of a finger. But a careful investigation would reveal the fact that the patient, following the doctor's directions, had used in reality a three or even four per cent. solution, which is sufficient to cause gangrene in most any case, if used long enough. Furthermore, it should be remembered that pure phenol is only slowly soluble in cold water; and unless care is used, much of the phenol may remain in globules undissolved on the bottom of the vessel, instead of being diffused evenly through the solution. Lack of care in seeing that the phenol was entirely dissolved has often resulted in severe burns, damaging both to the patient and doctor. In

¹ The Medical Press and Circular, Oct. 14, '08.

¹ J. Eddy Blake, M. D., N. Y. Med. Jour., Oct. 31, '08.

order to increase the solubility of the phenol, it is advisable always to use a mixture of phenol and glycerin, equal parts. Still further, phenol should not be used over very large areas, on account of its ready absorption and the danger of toxic symptoms. If the urine turns smoky or greenish black, the doctor should know that too much absorption is taking place; and unless he does know it, no doctor should employ this agent.

But limited to its own proper field, especially infections in the tendon sheaths, and in the deeper tissues of the extremities, there is no other remedy with which I am familiar that so speedily relieves pain and checks a spreading infection. A two per cent. solution is sometimes recommended, but this Blake considers risky, especially in children and where the circulation is poor. A one per cent. solution is strong enough and not risky. He usually orders the following prescription.

℞ Phenol2 grammes.
Glycerin2 grammes.
Boric acid4 grammes.
Water200 c. c.

The addition of the boric acid appears to increase the efficiency of the solution. If it is feared that this amount will prove insufficient he doubles the quantity, or doubles the strength of the solution, and orders that it be diluted with an equal quantity of water before use. Occasionally, if the skin is very delicate or if the circulation is very poor, or if the area to be kept wet is large, Blake orders but one gramme of phenol to the 200 c. c.; but this is rather too weak for routine use. Where the infection is severe but limited, as in a small abscess, we often use the ninety-five per cent. carbolic acid solution to destroy the site of the infection. We swab out the cavity of the abscess first with dry gauze, then with the phenol, and after a minute or two with ninety-five per cent. alcohol. A couple of days after such an application a small abscess will often be nearly well. Boils are often thus treated, the phenol being introduced into the infected hair follicle by a sharpened toothpick or match, on which are wrapped a few fibres of cotton. When the ninety-five per cent. phenol solution is used, the skin should be well greased, and care be taken even then not

to spatter the acid around; for if carelessly used it may cause severe burns. Water will not stop the burning; alcohol is the antidote.

The Treatment of Acute Coryza¹—

If acute coryza is seen at its earliest stage, when the patient has begun to sneeze, with, or without, slight catarrhal discharge from the nasal passages, we should try to abort it. A few doses of quinine will occasionally accomplish this, according to Robinson. When used it should be in two to four grain doses, repeated not oftener than once every six hours. Given in larger doses, or more frequently, it acts no better and sometimes acts as a depressant, and certainly not as a tonic. Quinine hydrochloride is the preferable salt. It is more acceptable to the stomach than the sulphate and is not so apt to occasion tinnitus or unpleasant aural symptoms.

Personally, after numerous trials, I have concluded that of divers prescriptions to abort a case of acute coryza none will accomplish it so frequently and with apparently so little objection as ammonium carbonate. This drug should be given preferably in mixtura amygdalæ or in water with a little syrup of acacia and orange flower water, as a flavoring agent. A grain to the dessertspoonful is a suitable dose, repeated every hour for twelve consecutive hours, and later at longer intervals. Every two or three hours is frequent enough for the second twelve or twenty-four hours.

If at the expiration of forty-eight hours the attack of acute coryza is not entirely aborted it is useless to continue the remedy. If ammonium carbonate is continued too frequently and too long it becomes a notable depressant of the circulation and sometimes occasions unpleasant symptoms of cardiac disability of temporary nature. Occasionally I substitute the aromatic spirit of ammonia for the carbonate in twenty drop doses every two hours, diluted with water, but it is not so efficacious as the former. Ammonia carbonate and also the aromatic spirit elimin-

¹ Beverly Robinson, N. Y. Med. Jour., Oct. 31, '08.

ate themselves from the body through the nasal mucous membrane and are thus useful locally. It is probable that they modify favorably the inflamed pituitary. It is also probable that not infrequently they prove fatal to the microbes, which are clearly present at times, and which doubtless are connected as a causative factor with the inception of acute coryza. I have come to regard ammonium carbonate as nearly a specific in the treatment of acute coryza, when it is used soon enough, repeatedly, and in suitable doses. While it succeeds more frequently than any other drug, or combination of drugs with which I am familiar, and with less unpleasant after effects, it fails frequently to accomplish the purpose of aborting the coryza. In my judgment, this is true when the coryza has not been treated with it at the initial stage, and in accordance with the precise manner I have indicated.

Among the other remedies indicated to cure, or rather abort an attack of acute coryza, I would moderately recommend the use of the Turkish bath. To a patient in previous good health and not much past middle life, it may usually be recommended as a safe and oftentimes efficient treatment. The bath should be taken, however, at a suitable time after eating, when the patient is not unduly fatigued, when he has time to give to it, and when, too, the attention of the attendant at the bath, who gives the after massage, or rub down treatment, is thoroughly available and not pressed for time by numerous other calls from bathers. When all the foregoing conditions are not strictly attended to, the Turkish bath may be harmful instead of useful and aggravate the coryza rather than abort it.

Locally, there is no spray, powder, inhalation, which *per se* will abort a coryza successfully. I have tried a large number of them, of different kinds, and at different times have believed I had found a panacea. Invariably I have been disappointed, and at present I have given up the search—almost.

When after the effort has been made to abort an attack of acute coryza and failed, it behooves us to institute other treatment. The most effective and least

injurious of these is the combination of sweet spirit of nitre with spirit of mindererus. Nitre in doses of twenty minims and spirit of mindererus, a dessertspoonful repeated every two or three hours, plain or diluted with a little water, will be found not unpleasant and effective. It is a slightly stimulating mixture, and with it the arteries are relaxed and the skin rendered more active. While taking it one must be careful not to sit in a draught or go into the open air unless the weather is very mild. If this indication is not attended to the coryza is aggravated, and laryngitis and bronchitis may develop. Indeed, it is rare, after two or three days at the most, that an attack of acute coryza, if it still persists, is limited strictly to the nasal passages. Tickling in the throat and slight, recurring cough ensue, with some repeated expectoration of frothy mucus, which all indicate the implication of the respiratory tract further along. At times, under these circumstances, the coryza is seemingly better, and there is less blowing of the nose, less discharge from the nasal passages, and a freer current of air through them. Again, these symptoms are no better; indeed, they are somewhat aggravated, and, in addition, the other symptoms just referred to are present.

Locally, when the acute coryza has lasted several days, I have believed that bismuth subnitrate with a little powdered acacia and morphine blown into the nose with a simple powder blower was of service in lessening discharge and irritation. Preferably, however, to this, in many instances, is the repeated inhalation of the vapors from equal parts of oil of eucalyptus, camphor, and menthol. For many years I have made use of this combination in a suitable nasal inhaler. When the nasal discharge becomes yellow and notably thick and abundant, or it may be decidedly purulent, I have repeatedly found that no application is so useful as the following, used night and morning, or even three times in twenty-four hours:

℞ Oleoresin of cubebm xx;
Powd. camphorgr. xi
Glycerinʒi
White petrolatumʒiii

M.

This ointment should be applied to either nostril with the tip of the finger, and then while moderate pressure is made to occlude the other nostril, the ointment is sniffed up, or drawn upwards and backwards in the nasal passage until it is felt or detected in the nasopharynx. What amount enters the pharynx is simply expectorated. After drawing up the ointment into one nasal passage until it is thoroughly coated, the same process should be used for the other side. By the use of this ointment the sensitive and inflamed pituitary membrane is protected against the air, atmospheric changes, dust, etc., and no doubt, also, a decidedly curative effect is produced by these combined agents, which are the most effective I have thus far found.

The foregoing treatment of acute coryza is practical, efficient, and has stood the test in very many instances and through a long term of years.

Finally, I would add that it is decidedly wise to always take a purgative dose of Rochelle salt in the morning, at the initial stage of acute coryza. Frequently coryza means, when properly translated, a susceptible mucous membrane, due mainly to congestion caused by lithæmia, and brought on by overeating or too much alcoholic stimulation.

GENERAL TOPICS.

"Mauling the Tissues."¹—Like all great practical principles, that of asepsis is apt to overshadow other important principles by overconcentration of the attention on a particular point.

The marvelous safety of modern surgical procedures, brought about by the mastery over germ action, has tended to obscure the importance of conserving tissue vitality to the utmost. Because much that was formerly deemed impossible can now be done with comparative impunity, much that it is unwise to do is now often done thoughtlessly or with indifference. The frequency with which some of our leading surgeons find it necessary, for instance, to caution against unnecessary handling of the

abdominal contents in a laparotomy suggests a deplorable tendency in that direction.

But it not the grosser forms of "mauling the tissues" that call for greatest protest, but the more common and apparently more insignificant forms, which are nevertheless quite as often potent for evil. It should not be overlooked that every point or line of tissue compression results in some degree of tissue necrosis, and that such necrotic tissue forms an excellent germinating ground for any micro-organisms that may find access thereto. If the absolute exclusion of germs were capable of attainment, that would not, perhaps, so greatly matter, but all asepsis, however carefully sought, can only be relative; hence the desirability, the duty even, of limiting the "mauling" of the tissues by ligature and suture to the least degree possible. The proper function of the suture is manifestly to maintain in apposition two surfaces that must be approximated under strain. Any excess of tension, however, over what is absolutely essential to neutralize the divergent force is not only unnecessary but injurious, since it increases the extent of the tissue necrosis.

A very common cause of this is to be found in the use of the larger sizes of gut, with a view to better withstanding unusual or spasmodic tension. It is, however, a wiser and safer principle in the use of catgut, to make use of the most delicate strand that will serve the purpose, thereby causing just as slight tissue strangulation as possible. If the resistance to be met is likely to be considerable, it is better to use many fine sutures in place of fewer stronger ones. Consider, for example, the hanging of a heavy picture. An adequately big spike driven into the wall will make quite a hole, destroying considerable wall "tissue." The same sustaining power can be obtained with infinitely less injury to the plaster surface, by using a picture hook fastened to the wall by three or four small brads, thus distributing the tension of the picture over a wider area.

As to the necessity for meeting spasmodic tension (e. g., that of vomiting), it is much better to meet it by external support with firm bandaging, etc., rather than

¹Editorial, Index-Abstract of Surgical Technique, Nov., 1908.

to depend on the sutures themselves. Those who have tried the former know it to be effective.

One point, however, in the use of fine sutures must be emphasized. It is necessary to exercise considerable patience in the tying of fine sutures, to avoid snapping of catgut. The necessary strain to tighten the catgut must be applied without jerking. Every mechanic knows that a strand of anything (catgut not excepted) will stand many times the strain evenly exerted, that would cause it to snap if applied with a jerk.

To sum up the essentials of catgut suturing.

1. Use the finest strand that will effect the purpose.
2. Use many fine sutures rather than fewer coarse ones.
3. If extraordinary tensile strength is required, prefer two or more strands of a fine suture material to a single coarse one of adequate strength.
4. Apply the necessary force in tying the knot evenly, and not in a jerky manner.
5. To meet spasmodic strain, support the tissues by firm external bandaging, and do not trust to the sutures themselves.

SOCIETY PROCEEDINGS.

THE EASTERN MEDICAL SOCIETY OF THE CITY OF NEW YORK.

The President, Dr. Wolff Freudenthal in the Chair.

The regular monthly meeting of this Society was held Friday evening, November 13th at the Cafe Boulevard. An unusually large number of members were present and many took part in the discussion of the papers presented.

In the executive conference preceding the Scientific Session, the usual reading of the minutes, committee reports and general business were disposed of. The President reported that arrangements had been completed whereby *American Medicine* had become the official organ of the Society and would proceed to publish the papers and transactions of each meeting.

The nomination of officers for the ensuing year then followed. The special committees in charge of the dinner, entertainment and dance to be held at the Hotel Astor, Thanksgiving night, November 26th, reported progress. Judging from the interest displayed and the activity of the various committees, the affair will be one of the most memorable in the history of the Society.

Dr. Abraham Jacobi will act as toastmaster. Dr. Freudenthal will preside. Dr. Wm. M. Polk will deliver an address. Rev. Dr. Stephen Wise will address the Society on *Medical Ethics Viewed from a Theological Standpoint*.

Dr. Kopetzky has secured a famous military band for this occasion; they will appear in full dress uniform.

The following members have rendered valuable assistance in making this dinner a social, financial and scientific success: Dr. A. Bassler, Dr. E. Altman, Dr. Emily Barringer, Dr. S. J. Kopetzky, Dr. A. E. Isaacs, Dr. Howard Fox, Dr. Louis Fischer, Dr. W. Freudenthal, Dr. Chas. Goodman, Dr. Louis Ladiniski, Dr. N. Mandl, Dr. Maurice Magid, and very many others.

Following the executive session Drs. David Sheitlis, M. Rabinowitz and A. E. Isaacs presented pathological specimens and reports of cases.

Dr. Ludvig Kast read a paper on *The Early Diagnosis of Cancer of the Stomach*, which was discussed by Drs. M. Einhorn, G. A. Friedman, A. Bassler, A. E. Isaacs, Louis Fischer, J. W. Weinstein, H. M. Stark and Willy Meyer, Dr. Kast closing the discussion. Dr. W. B. Trimble then read a paper on *A Brief Review of the Advantages and Disadvantages of the Intramuscular Injection Treatment in Syphilis*. This was discussed by Drs. B. Lapowski, H. M. Stark and W. B. Trimble.

Following adjournment the members enjoyed a collation by invitation of Drs. Willy Meyer, I. Grushlaw and H. M. Stark.

The following physicians were recommended by the Executive Committee for membership: Drs. Samuel Floersheim, L. Kast, Elsie Prince Miller, Samuel Rose, M.

Shoenfeld, P. A. Siegelstein, J. W. Weinstein and S. Weiner.

The membership of the Society is growing rapidly and already reaches close to the 600 mark. It includes among its members a large number of the leading physicians of New York City. The attendance is always large and the meetings are followed with enthusiastic interest. The scientific work of the Society is of a substantial order.

(Note. Dr. Kast's and Dr. Trimble's papers with full stenographic reports of the discussions will be published in the December number of *American Medicine*).

NOTES ON MODERN PHARMACEUTICAL REMEDIES.

(Continued.)

HOLADIN

(EXTRACTUM PANCREATICUM INTEGRUM.)

Description: Holadin is an extract prepared from the whole pancreas, representing all of the constituents of the gland and exhibiting in marked degree the characteristic actions of the various enzymes. It is a grayish white powder, slightly aromatic in taste and odor, and freely soluble in water.

Formula: Holadin contains the entire constituents of the pancreas gland, and its known enzymes—trypsin, amylase, lipase, and milk-curdling ferment.

Action: Holadin, while possessing great tryptic activity, is of special potency in respect to the amylolytic and lipolytic enzymes; moreover examination proves it to be rich in the important cell-constituents, lecithin and nuclein, which peculiarly abound in the pancreas.

Uses: Holadin is recommended in cases of constitutional disease, or in serious disorders of digestion attributed to faulty pancreatic functioning; it should be useful, therefore, not only in intestinal indigestion, but in pancreatic diabetes, incipient tuberculosis, and whenever digestion and assimilation are below normal.

Dosage: Holadin is furnished only in capsules, each capsule containing approximately three grains. One capsule should be given

about three hours after meals and one capsule at bedtime. The dose can be gradually increased to two or three capsules at a time.

Special Advantages: Its high starch-converting power in contrast not only with usual pancreatic extracts, but with diastase products in general, and its fat-splitting energy.

References: Holadin has been approved by the Council on Pharmacy and Chemistry, and a description appears in "New and Non-Official Remedies, Third Edition."

Manufacturers: Fairchild Brothers and Foster, New York, N. Y.

URIFORM.

Description: Uriform is a compound elixir of hexamethylene-tetramine, santal and saw palmetto.

Formula: Each fluid ounce contains:
Hexamethylene-tetramine, gm. 2
Saw Palmetto, gm. 1.2
Santal, gm. 0.64
Nux Vomica, gm. 0.064
Aromatic Menstruum, q. s.
(20% Alcohol.)

Action: Uriform is a urinary antiseptic and sedative. Its formula would also indicate that it possesses tonic properties.

Indications: This preparation is recommended in acute and chronic diseases of the genito-urinary tract, viz., acute and chronic gonorrhea, cystitis, pyelitis, prostatic disease and similar ailments.

Dose: One to two teaspoonfuls in water 3 or 4 times a day.

Special Considerations: The quality of the ingredients, the uniformity of the product, its palatability and clinical effect.

References: Uriform appears in New and Non-Official Remedies, 3rd Edition.

Manufacturers: Schieffelin & Co., New York, N. Y.

GLYCO-THYMOLINE.

Description: Glyco-Thymoline is a deep claret colored fluid with the taste and odor of thymol and eucalyptol.

Formula: This preparation contains benzo-salicylate of soda, methyl salicylate from *Betula Lenta*, eucalyptol, thymol, pini pumilionis, glycerine and solvents. The alcoholic content is 4 per cent.

Action: A solution composed of Glyco-Thymoline one part, water three parts, approximates the alkalinity and salinity of the human blood, thus harmonizing with the secretions of tissues treated. When applied slightly warmed to the mucous

membranes of the nose and throat it is soothing, solvent, mildly antiseptic, exosmotic and anesthetic. It promotes aseptic conditions and favors the restoration of normal functions of the mucous membrane. Internally Glyco-Thymoline is antacid, carminative, and anti-fermentative.

Uses: This preparation is recommended in the treatment of all catarrhal diseases of the mucous membrane, particularly of the upper respiratory, uterovaginal and rectal tracts, as a solvent, soothing, antiseptic and alkaline wash. Internally it has been successfully employed to overcome gastric hyperacidity, gastrointestinal fermentation, summer diarrhea of infants, etc. In obstetrical and gynecologic practice it has also proven useful. Its mild, non-irritating properties will suggest its use whenever and wherever an alkaline antiseptic solution is desired. In dentistry it has also been extensively employed.

Dosage: *Externally*—Glyco-Thymoline may be used in solutions ranging from 10% to full strength. *Internally*—It may be used one-fourth to two teaspoonfuls in water as indicated.

Special Consideration: The selection and quality of the ingredients, the methods employed in their combination, the formula itself and the constant unvarying uniformity of the finished product.

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Manufacturers: The Kress & Owen Co., New York City.

OLEOMANGAN.

(Weightman.)

Description: Oleomangan (Weightman) is an emulsion of olive and petroleum oils with peptonates of iron and manganese.

Formula: The percentage composition of this product is as follows:

Olive Oil,	7%
Petroleum Oil,	7%
Alcohol,	13%
Elixir Iron and Manganese Peptonate,	50%
Aromatics.	

Action: Oleomangan (Weightman) is tonic, hematinic and reconstructive in its action. It is claimed that it will cause a rapid increase in weight and an increase of red blood corpuscles.

Uses: It is recommended in chronic diseases accompanied by anemia or loss of bodily weight, more particularly incipient tuberculosis.

Dose: A tablespoonful in water or milk three times a day. Children in proportion.

Special Consideration: The special formula and method of preparation, palatability and therapeutic effect.

Manufacturers: Weightman Pharmaceutical Co., New York, N. Y.

BOOKS RECEIVED.

The Natural History of Cancer, With References to its Causation and Prevention.—By W. Roger Williams, M. D. Published by the William Wood Co., 51 Fifth Ave., New York. Price \$5.00 net.

Manual of Psychiatry.—By J. Rogues de Fursac, M. D. Authorized translation by A. J. Rosanoff, M. D. Second American from the Second French Edition. Published by John Wiley & Sons, New York. Price \$2.50 net.

Neurological and Mental Diagnosis.—A Manual of Methods. By L. Pierce Clark, M. D., and A. Ross Diefendorf, M. D. Published by the Macmillan Co., 66 Fifth Ave., New York. Price \$1.25 net.

Consumption, How to Prevent It and How to Live With It.—By N. S. Davis, A. M., M. D. Second Edition, Thoroughly Revised. Published by F. A. Davis Co., Philadelphia, Pa.

Ophthalmic Surgery, A Handbook of the Surgical Operations on the Eyeball and its Appendages as Practiced at the Clinic of Prof. Hofrat Fuchs.—By Dr. Josef Meller, Translation Review by Walter L. Pyle, A. M., M. D. Published by P. Blakiston's Son & Co., Philadelphia, Pa. Price \$3.00 net.

American Medicine

FRANK CLARK LEWIS, M. D., *Managing Editor.*

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The report of the Surgeon General of the Army is becoming more and more valuable scientifically on account of the statistics now available from many parts of the world. Alaska for instance still proves to be the healthiest place for troops, a matter for climatologists to take to heart, for it shows that the rest of the country is not as fitted for us as the climate of the northwestern corner of Europe which is quite similar to that of Alaska. On the other extreme the Philippines still lead in sickness and death in spite of vastly improved conditions, one-fourth those invalided home have tuberculosis, while bowel diseases and insanity make up another fourth. The sickness which rose to such great heights in 1898 and 1899 from tropical diseases has been gradually reduced until it is now about where it was in the peaceful days prior to the Spanish war. Moreover the total losses are less than in foreign armies, while the deaths from disease compare favorably in spite of the fact that so many of our troops are in the tropics—a remarkable condition for which the country should be proud. Unhappily the record is marred by the steady increase of venereal diseases and alcoholism which began with the abolition of the beer feature of the canteen.

Sanitation in the Army is receiving more sensible treatment from lay officers, one of whom actually delegated authority to his medical officer to issue orders to correct defects, and it is suggested that all appliances for carrying out sanitation should be purchased, installed and managed by medical officers as in all well regulated cities. Already sanitation has steadily reduced malaria below what it was in 1897, but in typhoid the rate is far less than for men of equal ages in civil life. Mention is made of defects still needing remedy such as the casemates which cannot be made healthful. The camps of instruction are being made as near like cities as possible, for it is stated that the old way of camping like a moving command which leaves its wastes behind, only creates disease unless the excreta are removed. To attempt to "harden" troops by exposing them to these excreta is declared a mistake of the officers of a past generation.

Tropical studies in the Army occupy considerable space, and most valuable results are recorded. Dengue is reported as now proved to be carried by mosquitoes, and the board of officers have decided that though various species of *amæba coli* probably exist, it is impossible to differentiate

them and they all must be considered pathogenic. It is interesting to note the decrease of disease with the cooler seasons, but it is amazing that there are still so many "undetermined" fevers whose causes must be discovered. Another valuable table shows that boys do badly in the tropics and that there is a progressive lessening of sickness up to 45, after which it rapidly increases. The death rate on the other hand is least at 20 and progressively increases with age. This reduces to figures what has long been known—men over 45 or 50 should not be sent out. It is the young man's place. Altogether, the report is of extreme scientific value, and taken in conjunction with the plans for further improvement of the service, it should receive earnest attention by Congress.

A new tubercular theory as to leprosy was suggested some time ago by Dr. Chas. E. MacDonald of the Army, who noticed in the Philippines, the same facts as to fish diet, which has long been held by Hutchinson as the cause. The present idea is not that the diet itself is at fault but that there is an infection from tuberculous fish—rather startling to be sure but not at all improbable. The matter is of timely interest in view of the differences of opinion as to the transmission of bovine tuberculosis. The vast difference between bird tuberculosis and the human variety has long been known and it raises the suspicion that there may be very many kinds of tubercle bacilli, some of which produce in man other conditions than tuberculosis as we now consider it. The revelation that bubonic plague is in reality a rat disease, and that some rats have a "tolerant immunity" to the germ, has raised compara-

tive pathology to extreme importance. It is now necessary to study the parasites of every lower animal with a view of discovering which ones can exist in man, either harmlessly or otherwise.

The X-ray treatment of leprosy has now been under investigation long enough to have raised hopes that we have discovered a remedy for at least some cases. Cures are reported from the Philippine Islands and they give rise to the hope that the popular dread of the disease may at last be allayed. There has long been a respectable body of opinion that the disease is not contagious in any sense of the word, and indeed there is an amazing lack of proof that it is ever transmitted from man to man. The facts of apparent transmission are now explainable on the hypothesis of common infection from the same source—some lower animal, perhaps fish. These two new developments of curability and non-transmission, should convince the public that the present barbarous manner in which they isolate the leper, is entirely uncalled for. Indeed, there is some evidence that the Biblical leper may have had something entirely different. At any rate we are not justified in continuing any of the old brutal ways of the ancient Hebrews.

The sterility of old ice from infected waters is a matter of such great importance, as far as public health is concerned, that it is somewhat strange it does not receive more comment. It is twenty years since Prudden made his classical experiment in freezing water infected with pathogenic organisms and then recovering them some weeks later. Since then the medical profession—particularly the health authori-

ties—have been of the opinion that freezing is more or less harmless to sewage borne disease germs, and that ice is always dangerous. Within only a few years has it been discovered that freezing is so injurious to protoplasm that in the course of time all organisms die. Prudden did not carry his tests far enough.

Experiments made by Dr. Wm. H. Park of New York, and others (*J. A. M. A.*, Aug. 31, 1907) show that in three days half the frozen bacilli are dead, in seven days seven-eighths, and in 4 weeks the water is as pure as though filtered; after four months the danger is negligible and after six months there is no danger. It is understood that other tests have been made but the results have not been given that wide publicity demanded by public safety. It takes time for cold to kill the organisms and there is some danger after all.

The crusade for pure ice should be kept up, notwithstanding the fact that remarkably few epidemics are recorded in which the blame has been definitely fixed upon old ice. There was just such an outbreak of typhoid in an American institution some years ago and the live organisms were recovered from the ice cut from a river a short distance below a sewer outlet. Other epidemics or isolated cases have been similarly traced both here and in Europe. Even if we had no such evidence, no one wants to drink frozen sewage, though its germs be as dead as a door nail. The high cost may compel us to permit companies to harvest a crop from contaminated waters unfit for drinking, providing it is stored under public seal and is not sold until tests show it to be harmless. It has been cus-

tomary for some companies to cut river ice immediately below sewer outlets. This disgusting and dangerous trade should be ended once and for all, and its promoters driven out of business, even if their goods are sterile after 6 or 8 months. For the present, and until all dealers can arrange to harvest uncontaminated ice, the crops from slightly contaminated sources might be passed under the above restrictions as to storage. The problem is to determine how much concentration of sterile sewage the public palate will tolerate, how long to keep the ice, and what degree of contamination is prohibitive.

Infected artificial ice is a very serious matter, because it is sold immediately after manufacture, and the organisms present are virulent. It was found in the District of Columbia (*Bulletin No. 35, Hygienic Laboratory, U. S. P. H. and M. H. S.*) that some of the factories were horribly filthy and colon bacilli were recovered from the ice. Occasionally the methods are so filthy that the ice contains more bacteria than the water from which it is made. Our confidence in artificial ice has been sadly misplaced. If this ice were stored for some months, it too would become sterile, but it is impractical to lock up capital in this way. This newly discovered disgusting practice may fully account for the distribution of typhoid, and it is high time that ice factories be placed under restraint and compelled to be decent enough to respect public health. Every day something is discovered which shows that the health of the consumer is not sufficiently considered by tradesmen and producers. The consumer must rise in his just wrath and put the criminals in prison, if they refuse

to be guided by sanitary laws. Prison is now threatened for certain trust magnates who are really criminals but who hide behind a corporation charter which makes the corporation the inanimate offender. Now let the pure food laws send to prison those who jeopardize the health of the consumers.

What is the matter with the medical profession? That something is the matter would seem to be the opinion of almost every one interested in medical affairs. The lay papers have devoted no little space to discussions concerning medical economics, and it appears to be a pretty general impression that the regular practice of medicine has fallen upon the "lean and hungry years." For a long time it has been said that the average medical income has been decreasing. This is probably a fact in a general way, for the lot of the general practitioner has been growing harder and harder. His sphere of usefulness has been contracting, until about the only thing left for him to do is "first aid" work, or to act as advance agent for his friends, the surgeon and the specialist. These words are not written in a spirit of pessimism, but if only half of what one hears is true, the situation warrants real apprehension. It is time, therefore, for the regular medical profession to take account of stock, and learn, if possible, the reasons for the apparent decline of professional prestige, and the all too evident shrinkage of medical incomes.

Medical men themselves are certainly to blame for many of the conditions which now confront them. With an almost fatuous adherence to the archaic tenets of bygone days, we have clung to

the idea that the practice of medicine is something so far removed from business or trade, that the consideration of ways and means by physicians is ignoble, if not defiling. Disregarding completely the changing psychology of the masses, we have stupidly allowed the charlatan and fakir to occupy the center of the platform, and hold the public ear. Proud of our science as we know it, we have stood in the background, foolishly believing that the people would have sense and judgment enough to recognize the false and turn to the true. But who ever knew the public to use their judgment—if they have any? We should have known that the multitude want and must have sensation. We should have known that the masses need leading, guiding and constant suggestion. We should have blazoned to all the world the real progress of medical science, and taught the people the necessity for certain fundamental qualifications in the treatment of disease. We should have come out into the open, and with our generally admitted superior knowledge and skill, driven the quack, charlatan and fakir out of business. There never was a fakir, Christian Scientist, faith curist, osteopath or any freak healer on earth that could do what an ordinary regular physician can do, *if he will only do it*. But no, too many of us have felt that the treatment of symptoms was a confession of weakness, that the prompt relief of pain, etc., masked conditions, and was not honest to our patient. As a consequence, we have directed our attention primarily, and too often too exclusively, to the removal of underlying causes. This has all been prompted by honest and scientific motives, but our zeal to do our whole duty has blinded us to many things

that would have advanced our own interests—if not our patients’.

Sick people are grown up children,— and they want the prompt results and the coddling that little children require. They need the “abracadabra,” or the pseudo-mysticism that places them temporarily in mentally receptive moods. That medicine in its constant contact with material things has lost sight of all this, is perhaps not strange, but it is not a testimonial to business perspicacity.

Had medical men studied their patients as assiduously as they have diseases; had they realized that the one great demand of the sick is prompt effects, or at least prompt action; had they realized that certain ends justify certain means, we would not find to-day doctors of divinity treating hysterical women and hypochondriacal and neurotic men by “laying on of hands,” and “soothing words.”

If the medical profession can be criticized more severely for one defect than another, it is because it has been too honest, too frank. It has tried too hard to protect the people from themselves. It has fought too well for those who have fought against being fought for. And while we have been dealing body blows to the great scourges of the world, removing humanity once and for all from the thralldom of these former tyrants, it is entirely probable that we have failed to properly realize the economic necessity for treating seriously the minor ailments of humanity, or of ministering to “minds diseased.”

It is humiliating, after honest, legitimate, scientific medicine has accomplished what it has, to find that years of the hard-

est kind of study and research have no higher standing in the eyes of the majority of people than the newest and most visionary cult. A few truths, a few magazines and newspaper articles, some lectures, a little theological endorsement, a few neurasthenic patients, a dash of feminine adoration, and lo, a new school arises and essays to take the place of scientific medicine! Carping critics seize the occasion to point out the short-comings of the regular medical profession, to tell us what we do not know, and what we, as practitioners of medicine should, but have not done. Medicine-baiting has ever been a favorite pastime with many individuals, and dissatisfaction with some particular doctor has been enough to bring down upon the whole science of medicine maledictions and condemnation. It would seem that the people expect their physicians to be miracle workers, a good deal more than human, and only a little less than angels. When they find out, as all must sooner or later, that the most learned physician is just an ordinary mortal who has made the human body his special field of study, and that he knows no more, and can do no more than any other man could do with like study, opportunities and application, the awakening causes a revulsion of sentiment that too often takes the form of the most violent antagonism.

The real trouble with the medical profession, after all, may be that it has overestimated the intelligence of the people. The public has asked for medical fiction, the occult, and the mystical, and we have, alas, betrayed them by telling them the truth. Incidentally, no other profession or calling has given so much of its time

and labors without recompense. In nearly every town or hamlet there is a hospital to-day where the needy—and too often the wealthy—can get the best that the profession can give without fee or price. In every community, conscientious medical men are faithfully guarding the public health, standing like sentinels to protect their fellows against contagion and pestilence. Let a scourge but come, and the medical man never pauses, but without fear or thought of self, sails into the conflict to fight until death or victory triumphs. When famine, accident or other calamity turns streets into shambles, and the strongest of men quail at the sights unfolded, there will you find a doctor easing the dying, succoring the wounded. Where he is needed, there he is. If, therefore, there is any more useful man among men than the genuine, simple pure doctor of medicine, we have yet to meet him and we doubt if he exists. The American people will doubtless have to experience some great affliction to realize the real worth of their doctors, but when the time does come, they will not be found wanting.

It may be possible, after all, that there is nothing serious the matter with the medical profession. On the other hand can it be that history is only repeating itself, and that once again the people are showing how prone they are to wander from the paths of common sense and truth?

The danger of giving freedom to paranoiacs has again been shown in the attempted murder of New York's postmaster. There is an increasing public opinion that such maniacs must be confined for life as soon as they have shown a tendency to at-

tack anyone, or even when there are delusions of persecution. At the same time it must be explained that these are the very cases most difficult to keep in confinement, for they give rise to the ugly charges that sane men are being deprived of liberty and property through the collusion of relatives. There is a widespread opinion that confinement of the sane is not only possible, but easy to accomplish and quite common, though as a matter of fact it is so rare that we might say it never occurs. Yet it is gratifying that this false popular notion is gradually fading. The alienists themselves are awakening to the realization of their duty to protect society and it is becoming more and more difficult to employ them to aid dangerous men to obtain liberty. It does look as though public opinion would end the disgraceful exhibitions given by some recent trials.

The spread of the clean milk movement well illustrates the power of commercialism to enlighten the people and promote their welfare. For a long time humanitarians and philanthropists have been preaching the value of milk free from contamination. A certain amount of interest was created among thinking people, but it was not until business enterprise took the matter up, showed the feasibility of clean milk, and made cleanliness and careful methods of handling earning forces, that the public really began to grasp the proposition. With financial interest as the motive power it is certain that the clean milk propaganda will be actively promoted and the gain to all classes of people, especially the poorer, will be great.

Once again, therefore, is shown the sociologic value of honest commercialism.

Those who are inclined to rail against the commercialistic tendencies of our age want to be very sure that they are not condemning the forces that after all are the most effective of modern civilization. The milk problem, at least, is being safely and sanely solved as the result of commercial enterprise, and the lives thus saved and the diseases thus prevented, furnish an unanswerable argument for the humanitarian possibilities of business.

Dr. Bull's brave fight cannot fail to excite the admiration of his colleagues and countless friends. A weaker, less courageous spirit would have succumbed long ago. But with a strength of mind and will power that will stand for many a day as an object lesson to the ill and afflicted, this wonderful patient has rallied again and again. The hopes and sympathies of the whole profession are with Dr. Bull, to an extent that perhaps would be accorded to few other men. His splendid personality, and well recognized talents have reflected honor on his calling, and won for him an enduring place in the hearts of those who know and love him.

Simplicity of surgical technique is a mere matter of evolution, but it is well now and then to utter a word of caution against too much elaboration of methods and instruments. As soon as we find a simple means of accomplishing our ends it drives out all complicated methods. Of the untold thousands of mechanical surgical contrivances invented, very few survive. It may be accepted as an axiom in both medical and surgical practice, that the simpler the better. Many a surgeon has achieved success and fame, with a me-

chanical equipment so simple and limited as to appear ridiculous. The young surgeon need not despair because his poverty prevents the purchase of an enormous armamentarium, most of which will serve no nobler purpose than to hypnotize susceptible patients. It is well to remember that every new discovery in etiology or therapy opens up a direct means of attack. Instead of the complicated blunderbuss methods when the dim light of partial knowledge prevented accurate aim of our crude weapons, we have the clear light of knowledge and a simple rifle. Elaboration and complication merely defeat our purpose.

The Age of Hygiene and Sanitation is at hand. Thanks to the development of medicine and the unselfish work of innumerable "soldiers of science," an era of health such as the world has never seen is before us. The forces of science, religion, education and of commerce have heard the call for volunteers to wage this world struggle against preventable maladies. The result has been the creation of an army of earnest fighters who gradually but none the less surely are beating back the hordes of disease. Every day brings news of new victories over the enemy, and every day dangers which once loomed large grow less and less.

Truly, humanity has much for which to feel grateful. It is an inspiration to all mankind to look around and note the successes that the forces of hygiene and sanitation have won. Only a little while ago, the common enemy seemed invincible. But hopeful courage and intelligent effort commenced to wield their trusty weapons—cleanliness, pure food,

pure water, good air and common sense, and lo, triumph upon triumph has followed.

Sacrifices, suffering and black despair have oftentimes been the lot of those who have fought so well. Many have died that many more might live. But now close ahead we can see safety for mankind, and comparative if not absolute freedom from the bondage of disease. No one can minimize the part that medical men have taken and always will take in the war for health, but only medical men know how useless would have been their efforts without the splendid co-operation of the world's thinking men and women. To them, after all does the glory belong.

One year ago the present management took over AMERICAN MEDICINE. To a certain extent the venture was in the nature of a trust, for the close relations that had been established between the journal and its readers were thoroughly appreciated. In other words, it was realized that AMERICAN MEDICINE owed a definite obligation to the medical profession. With earnest purpose to be true to every duty and to constantly strive to get a little closer in each issue to the best ideals of medical journalism, the task was undertaken.

Now, as we stand with a full year's work completed, a little pardonable pride may be allowed us. AMERICAN MEDICINE as it is today tells its own story. Its paid subscription list, which last January was one exceeded or even equalled by few of its contemporaries has increased over thirty-five per cent. This increase while general in its geographical distribution, has been particularly noteworthy in New York and New England. Over one thousand new paid in advance subscribers have been obtained in New York City alone!

In regard to its reading pages, of which there have been 604, some data may not be amiss. There have been 210 editorials, 102 original articles by the country's leading sanitarians, clinicians and surgeons, 136 original abstracts, 100 books noted or reviewed, 40 new remedies described, 52 illustrations, and numerous other interesting departments, notes and comments. The advertising patronage has increased a little over forty-six per cent.

The appearance, typography and printing of AMERICAN MEDICINE speaks for itself. Nothing spectacular or "yellow" has been attempted, just plain, wholesome dignity in keeping with its professional and scientific character.

The foregoing may border on the unseemly and bombastic. We trust, however, that none of those who read these few words will see in them anything but a reflection of our earnestness and optimism.

AMERICAN MEDICINE has a long way yet to go before it reaches the ideals of those who are directing its destiny. But the hope, courage, independence, and honest purpose back of it, insure that its march will be onward—never backward. Many friends have contributed their share to what has been accomplished. To these we extend a gratitude that mere words cannot express. May we continue to have their encouragement, support and well wishes!

Attention is called to the Index for 1908 which appears in this issue. It shows in no uncertain way the vast amount of material that has been provided for the readers of AMERICAN MEDICINE. In the number and range of subjects presented few monthly medical journals have better served their subscribers, and we respectfully submit that the work done during the current year—the first under the present editorial management—offers ample assurances for the future of AMERICAN MEDICINE.

ORIGINAL ARTICLES.

SOME UNUSUAL FEATURES AND COMPLICATIONS OCCURRING IN TYPHOID FEVER.¹

BY

JOSEPHINE WALTER, M. D.,
New York City, N. Y.

The unusual features and complications occurring in the course of typhoid fever to which this paper will call especial attention are often not only puzzling and a source of anxiety to the attending physician, but also frequently entirely misleading as to diagnosis and to treatment. All the following cases occurred in the writer's own practice, with the exception of two, which, however, although not treated by her, were under her observation.

In order to avoid unnecessary and wearisome details, the full history of each case is omitted, and only so much of it is given as has immediate bearing on the special symptoms considered. Often two or more unusual symptoms appeared in the same patient, and as it is to certain of these symptoms which the writer desires particularly to refer, they are arranged in groups under their distinctive headings, with such appended remarks as will serve to emphasize the various data.

GROUP I. *Influenza-Typhoid Fever.*

CASE I. Miss C., had been in the medical ward of the N. Y. Infirmary about 12 days for what was diagnosticated as "bronchitis," but which from the history of the case previous to entrance and during her stay was probably influenza. She had had a cold in her head with all the usual catarrhal symptoms,—cough, at first

dry then harsh; pains general, but especially in chest, back and shoulders; loss of appetite, and a feeling of languor and weakness. The highest temperature after admission was 99.6 and only for a very short time. For several days she had been perfectly well and expected to leave the hospital the next day. The evening previous to this intended discharge of patient, the first symptoms of a long and severe course of typhoid developed, from which she eventually made a perfect recovery.

Remarks: This case is similar to one described by Manges in the following words: "I was called to see a young man, age 26, who for four days presented this group of symptoms: fever, general pain and aching of throat and eyes, bronchitis, etc., symptoms so characteristic of the catarrhal type of grippe. The attack terminated as abruptly as it began, and he immediately went off to a suburban club to recuperate, being perfectly well when I saw him before he left. Six days later I was called to see him and found him suffering from a fully developed attack of typhoid fever, to which he succumbed from perforation."

Perhaps this might have been the fate of Miss C. if she had been discharged in the first days of convalescence. Manges quotes in regard to his case, a paper written by Potain wherein are described 6 similar cases directly following grippe, also cases reprinted by other authorities, so that there can be no doubt of grippe influenza preceding an attack of typhoid fever. The direct relationship, if any, has not been demonstrated.

GROUP II. *Malaria-Typhoid Fever.*

CASE 2. Mrs. S., aged 44. Had served during the early summer in the Salvation Army, stationed in Belmar, N. J., and had been compelled to sleep in a damp room, where she thought she developed malaria. She had been ill one week on admission to hospital; with a broncho-pneumonia, which

¹ Read before the Woman's Medical Association of New York, March 18, 1908.

proved to be the early broncho-pneumonia of typhoid fever. The case ran a typical course of this disease, and while during the first week in the hospital no Widal reaction could be obtained, the tertian variety of malarial organisms was found. Later on, the Widal test was positive, but the malarial organisms had disappeared.

CASE 3. Miss C., 26, ill three days previous to admission. She had passed the summer at Bath, L. I., living in a school house that had previously been closed for some time. Three days after admission, the blood examination gave a negative Widal test, and a positive malarial organism present. Quinine was given freely the first week, and while there was no effect on temperature, malarial organisms were not found again. The case ran a regular course of typhoid fever, a positive Widal test having been obtained in the course of the disease.

Remarks: There is on record much discussion as to the association of malarial and typhoid fever, and while this association is still denied by some, the fact remains that the two diseases can be associated, although the lesser one may be held in abeyance by the greater.

Osler reports the following: "The first days after admission the patient's blood showed non-pigmented intra-cellular hyaline bodies; later, 7th day after admission ovoid bodies with coarse pigment granules; temperature normal. The following day temperature rose and patient passed through a severe prolonged attack of typhoid fever with no further evidence of malaria." He also reports five cases in which malarial organisms and typhoid bacilli were found together. Lyon reports 30 cases—in some of which the malarial history with demonstration of malarial organisms preceded the typhoid attack; others, in which the two diseases were associated; and still others again in which the malaria seemed to disappear during the

course of the typhoid, to reappear during convalescence. The typhoid picture has always been more prominent throughout these cases, suggesting that typhoid fever is the "masterful disease."

GROUP III. *Pregnancy—Typhoid Fever.*

CASE 4. Mrs. K., aged 23. Typical onset and course of typhoid fever—with perfect convalescence.

Patient was six months pregnant on admission to hospital. A few days after admission she had a very slight bloody discharge from the vagina lasting only two days. During the 3rd week in hospital and 5th week of illness, temperature made a sudden abrupt jump from 98 to 105, dropping gradually to normal in three days. The following week, patient miscarried in a perfectly normal way, no unusual distress, no profuse flow, no weak pulse, in fact no complication, no indication for local treatment before or after the miscarriage.

CASE 5. Mrs. L., aged 25. Also usual onset and course of typhoid fever. Diagnosis verified by Widal reaction. Patient was six months pregnant on admission with history of one week's illness. She was in hospital six weeks, made a perfect recovery, and although albumin and casts were present in the urine, disappearing with convalescence, she did not abort but returned in two months to be delivered of a healthy child in a perfectly normal way. It is to be regretted that her rather recent recovery from typhoid fever was not known at the time of delivery as an examination of the blood and urine of mother and child would have been very interesting.

Remarks: There is quite a difference of opinion as to the immunity of pregnant women to typhoid fever, and as to the effect of the typhoid toxins on the pregnancy. Some claim that these patients enjoy no immunity, while others claim to recognize a decided immunity on the part of pregnant women which increases as the pregnancy increases (Murchison), although the danger to the mother is greater the more

advanced the pregnancy at the time of abortion. Osler says the complication is rare, having had in one series of 400 typhoid fever cases in six years but one pregnant patient. The majority of observers claim that abortion or premature delivery is apt to occur and with great danger to life of mother. Curschman says "gravidity in typhoid fever is to be considered a dangerous complication, though not comparable to the danger in small pox." Murchison says "It is always grave." Liebermeister "exceedingly dangerous." Osler, "Mortality is high." Statistics show abortion or premature delivery in about 70%, and death of mother in from 33 to 50% of cases. Such a serious result, especially to the mother, is certainly dependent, to a great extent, on the age of patient, the period of pregnancy, the stage and the severity of the disease, although it would seem that the hemorrhage accompanying the abortion by thus eliminating some of the toxins, might be a contributing means of saving the life of the patient. None of the writers mention this, but rather dwell on the fact that the loss of blood is itself a cause of death.

GROUP IV. *Appendicitis Simulating Typhoid Fever.*

CASE 6. Miss K. was admitted to hospital as a private patient having been seen the day previous by the writer in her office. At this time many of the symptoms suggested typhoid fever, but pain referred to the cecal region; tenderness, and some apparent induration in this region, temperature, 103, some nausea and vomiting; tympany around area of induration, although no rigidity, caused due consideration to be given the possibility of appendicitis. These symptoms however disappeared in a few days and the case ran a typical course of typhoid fever, free from complications and relapse.

CASE 7. Miss S., examination day

after admission, patient complained of pain referred to the right of umbilicus, where were found some muscular resistance, dullness and local as well as general abdominal tenderness. These symptoms gradually disappeared, as case developed into typhoid.

CASE 8. Miss C. Patient had been for several days perfectly well after an attack of grippal bronchitis, when on the evening prior to her departure from the hospital she complained of pain in cecal region, and headache, to which no attention was paid, as it was thought to be a ruse to remain longer in the hospital. But later in the night from normal the temperature rose to 103.2, vomiting occurred frequently. Next morning pain was still complained of and referred to appendiceal region,—tenderness was marked over McBurney's point, with slight resistance and muscular rigidity. Dulness quite marked and well defined, with typical pain accompanying sudden removal of hand pressure. Vomiting had ceased but temperature was still high. Although these symptoms were pronounced enough to suggest appendicitis, even to have a consultation with consulting surgeon, the case was looked upon as a beginning typhoid, and in a few days these local symptoms disappeared as the typhoid fever developed.

CASE 9. Miss W, this was not the writer's case but under her observation throughout the whole disease. The patient had been miserable the day of evening she was taken ill, but feeling better had eaten a very hearty evening meal. Retiring she complained of nausea, and irregular, intermittent intestinal pains which finally centered in the appendiceal region. Temperature was 102.4. The first diagnosis was appendicitis, as patient had had one marked attack, but as within two or three days symptoms were the same, that is, local pain and temperature, rheumatism was a tentative diagnosis by the attending physician. The writer however suspected typhoid fever, which it finally proved to be. This patient a few years later was operated upon for appendicitis, operation showing an old chronically involved appendix.

Remarks: Appendicitis and typhoid fever are often mistaken one for another. In fact so closely do the early symptoms

in typhoid fever simulate appendicitis that cases have been operated upon by the best of surgeons under the suggestion of competent practitioners, the healthy condition of the exposed appendix and the further course of disease having proven the error of diagnosis and treatment.

But while the mistake may be made it can be reduced to a minimum if not altogether avoided, by careful observation of the symptoms, inquiry into previous history and surroundings of patient, painstaking examination for all symptoms of appendicitis, such as localized pain, muscular rigidity, dulness on percussion, induration as obtained by palpation through abdomen, through vagina or rectum, rapid pulse, leucocytosis, and a history of *epigastric pain or distress preceding the centering of the pain permanently in the appendiceal region*. Careful elimination of some if not all of these points suggestive of appendicitis, even if it takes some time, will help to make a correct diagnosis. And in cases where, on abdominal palpation some induration is felt in the right side it is well to bear in mind Bernard's early sign of typhoid fever, viz., in the ileo-cecal region "two to three small swellings varying in size from a filbert to an almond $\frac{1}{2}$ to one inch apart, lying parallel to the axis of the colon." Bernard claims that these appear about the end of the first week, and disappear usually some days later, but as he considers them a hyperplasia of Peyer's patches accompanied by inflammation of mesenteric glands, it is difficult to believe they disappear in a few days. Rather is it probable that the condition lasts an indefinite time, and that it is this very condition which at times gives the symptoms simulating appendicitis. In some cases observed by the writer, the pres-

ence of a localized induration in right side shown by percussion and palpation, appearing and disappearing more than once during the course of the disease, and often looked upon as fecal accumulation, has frequently made her question if Bernard's sign may not subside and redevelop more than once during course of the disease. McCrae calls attention to the possibility of the typhoid toxin producing a mild appendicitis, perhaps a severe appendicitis, and also to the possibility of an appendicitis developing independent of the typhoid toxin. He adds the very comforting words: "The treatment of typhoid fever is favorable to a recovery from appendicitis."

GROUP V. *Age—Typhoid Fever.*

CASE 10. Mrs. W., aged 52, passed through a typical attack of typhoid fever, with no complications, no after effects. Her mental condition, subjectively, as described by her was rather unusual; in the first days she seemed to herself to have shrunk away to almost nothing, a simple mass with no sense of feeling, with only a consciousness of being; later, severe headaches developed, and still later an uncontrollable fear that she would be considered insane and taken to an asylum. It was like a frightful nightmare coming upon her as night approached, and completely possessed her to the exclusion of every other thought. She would cling to her nurse, beg her not to allow her to be put in an asylum, to tell her family that she was not insane, in case she could not talk for herself. This patient made a perfect recovery.

CASE 11. Mrs. B., aged 56. Also a typical but mild case perfectly free from complications. Patient was seen the first day of illness. She then had a temperature of 103. As she had been apparently perfectly well up to this day, except some slight constipation, this sudden rise of temperature and headache being the only symptoms quinine was given. This did not influence the temperature at all so an examination of blood for typhoid fever was made the next day and a positive Widal re-

action was found—a very early date but reliable as it was made by one of the best pathologists of the city. As said, the case ran the usual course, spots were always a question, but enlarged spleen, constipation, classical temperature curve were all present. At no time was there any unusual cardiac condition.

Remarks: All writers speak of typhoid fever as being especially a disease of young adult life, and the greater number seem to be of the opinion that while old age is almost a protection against it, it is in itself a great menace, the danger increasing with each year of life. Forty is given as about the age after which a serious result should be expected, and this notwithstanding the fact that the symptoms may not be so acute, the temperature may not be high, spleen perhaps not enlarged. Cardiac weakness, however, is more apt to develop and if hemorrhage should occur it is usually extremely grave. Nevertheless in a recent paper Manges discredits the statement that old age is immune. He, with others, claims that the immunity of the old to typhoid fever is largely due to the old having had it when young, and that old people do develop typhoid fever he proves by quoting cases, reported by others, aged respectively 61, 72, 86, 92, 108, and claims to have had under his own treatment many patients over 50, and several over 60. Osler in a group of 399 cases had five cases between 60 and 70 years of age. All admit the prognosis is very grave, especially as these cases present such atypical symptoms. Their protracted convalescence renders them very susceptible to complications, so that often the disease is only properly diagnosed on the autopsy table. Fifty per cent. of the cases are said to be fatal (Uhle).

GROUP VI. *Edema (local)—Typhoid Fever.*

CASE 12. Mrs. S., about 6th week of illness presented the unusual feature of marked fullness in epigastric region with edema of abdominal wall, extending to lower ribs. A trace of albumin and now and then a hyaline cast had been found, but nowhere else was there any edema.

In case of Miss C., about end of 5th week of disease there appeared a marked edema of upper abdominal wall, extending to line of umbilicus. It lasted 10 to 12 days. Urine was always negative, no edema of any other part of the body ever developed.

Remarks: This unusual feature is presented although no explanation can be made of it, either from present observation or from the literature. No author makes any mention of it.

GROUP VII. *Ulcer of the Pharynx—Typhoid Fever.*

CASE 13. E. H., aged 20. Presented among other intense features of a severe complicated attack of typhoid fever, an ulcer on the roof of the mouth, having the classical appearance of an intestinal ulcer, and it was looked upon as a typhoid ulcer, although no examination was made for bacilli.

CASE 14. M. M. S., not a patient of the writer's but seen through the courtesy of the attending physician, developed an ulcer of soft palate, presenting the same appearance as the above case. A question of diphtheria was entertained at one time, but gave way to the diagnosis of typhoid ulcer, although no examination was made for bacilli.

Remarks: McCrae speaks of ulcer in the pharynx, on the soft palate as being either a part of the specific typhoid process or due to secondary or mixed infection. In the case of M. M. S. it must have been a pure unmixed typhoid infection as the case presented no complications, while in the case of the writer, E. H., it could have

been due to a mixed infection, as during the course of disease, patient developed a purulent otitis media and various abscesses at parotids at different sites of hypodermic injection, and all this in spite of the most careful attention to mouth and person of patient. Strumpell says that ulcers appear in mouth in very severe cases, but not if mouth is kept clean. It is claimed that ulcers are found in 20% post mortems in the larynx, in which are frequently demonstrated the typhoid bacillus. I think ulcers of the pharynx are not as rare as the mention of them in the history of cases would suggest; we have the term pharyngo-typhoid in medical literature, indicating that pharynx is much involved. The ulcer is described by Quinlan as clean cut—superficial, and seen on soft palate more frequently than any other part. He claims that the reason why this feature of typhoid fever is not better known is due to the lack of proper examination of the mouth, partly owing in turn to the apathetic delirious condition of patient causing no complaints to be made of the throat. Curschman mentions two cases of ulcer of the pharynx covered with a thin white deposit diagnosed at first as diphtheria. In one case incipient scarlet fever was suspected because of associated slight initial rash.

GROUP VIII. *Erythema—Typhoid Fever.*

CASE 15. M. C. As this case developed in the ward during convalescence from grippe, the very earliest symptoms were under observation—and among them, 24 hours after first rise of temperature, was an erythema all over trunk, simulating a scarlet fever rash, although somewhat paler, and disappearing the next day. On fifth day of illness the typhoid roseola appeared repeating itself in successive patches for seven to eight weeks. At the end of the fourth week there developed quite a marked

desquamation of fine white scales, at first limited to abdomen, then becoming more or less general, lasting several weeks. This patient was not tubbed. As to medication kryofin was given before the rash in one small dose, but as it was repeated several times later after the erythema had disappeared, it is doubtful if this drug caused the trouble.

CASE 16. M. R., had been working very hard as probation nurse, being in charge of a suspicious conjunctivitis case, which did not prove to be diphtheritic under the microscope. Complained of being ill, and as cervical glands were found enlarged and tonsils covered with white patches, some temperature present, she was sent to the isolation rooms and next day on examination there was noticed a general erythema, closely simulating scarlet fever. No antipyretic had been given in 48 hours and when patient had taken phenacetin and salol, no rash appeared. This rash or erythema was preceded by a mottling of the skin, quite diffuse, particularly over the face, lasted only two days. Pressure of the finger intensified the color, leaving a line when pressure was removed. The onset of this attack at first suggested diphtheria, as patient had been taking care of a suspicious case, but the exudate in throat was white, easily removed and left no bleeding surface. Examination of swab was negative. Then as erythema developed with throat trouble, temperature 103.5, scarlet fever was strongly suspected, but in a few days typical symptoms of typhoid fever developed and the case ran a course clinically of this disease, giving one of the most classical temperature curves the writer has ever seen. However, of special interest in connection with this typical typhoid fever picture were, a vomiting persistent for ten days, necessitating hypodermics of morphine; casts and albumin throughout the disease remaining after convalescence; heart murmur throughout the disease and still present when patient left hospital against advice,—all symptoms which may form part of a typhoid fever, but which make the question of associated scarlet fever not out of place.

Remarks: Associated scarlet fever and typhoid fever are not unknown. Fournier

found 75 such cases co-existing, and says, sometimes the one precedes the other—usually the typhoid takes the precedence. Murchison describes eight such associated cases. Curschman speaks of a general erythema as quite rare, having seen it but seldom, then only on extremities and trunk, but he refers to others who have noticed it. He mentions one case at first supposed to be scarlet fever, the throat trouble and rash being the most marked features at the onset of the typhoid fever.

GROUP IX. *Atypical Varieties of Typhoid Fever.*

CASE 17. Miss S., 11 days before admission to hospital complained of headache, sleeplessness, nausea, anorexia; had four or five stools daily. A few days previous to admission, feeling better, had eaten freely of everything. On admission, T. 102. Two days later T. commenced to drop, and on 9th day after admission was normal. Remaining so the patient left hospital four days later, against advice, although perfectly well. In fact she felt so well that she was greatly annoyed at being kept in bed. This case had typical spots for six days—enlarged spleen, Widal reaction, slightly irregular and at times weak heart, constipation, some pain in extremities.

CASE 18. L. O. Ill 5 days with pain, chilliness, sorethroat, headache; was treated for 3 days before admission to ward, with quinine, phenacetin and salol, the temperature falling four degrees to rise suddenly again (the usual action of phenacetin). On admission to ward the following objective symptoms of typhoid fever were found: Enlarged spleen, coated tongue, roseola, the macules disappearing on pressure,—some papules on abdomen and arms—typhoid facies, constipation, dry skin. No Widal reaction was ever obtained but Diazo reaction was present. Temperature was a little over 103 in the afternoon for five days and then gradually fell to subnormal on the 9th day after admission, 13th day of illness. Enlarged spleen and roseola were still present when temperature was subnormal, when it remained between 97° A. M.

and 98° P. M. for several days—a temperature which the writer has come to look upon, occurring at the end of a disease, as almost pathognomonic of typhoid fever.

Remarks: All writers speak of these atypical types as indicating that they are of short duration. They may be so light, severe or only some of the classical symptoms may be present. Spots may appear after temperature has disappeared, thus misleading the physician as to the nature of the disease; a relapse may occur more severe than the original attack, or a complication may develop which may be the first intimation of the true character of the disease. McCrae says "We are not sufficiently impressed with the importance of this type of typhoid fever. Bearing it in mind the physician will watch more carefully and use every means to make a true diagnosis, not waiting till a fatal relapse after patient returns to work, gives the diagnosis with unfortunate certainty." Especially in epidemics patients may complain of symptoms which persist for a few days only—these may be compared to the mild attacks of cholera during an epidemic (McCrae).

As to the causes of these mild attacks nothing positive is known, but the following may be possible explanations: attenuated bacilli,—paratyphoid bacilli,—slight infection, the "petit dose" of the French,—slight susceptibility, or marked resistance, or unusual eliminative capacity of the body,—explanations which are oft-times suggested by the fact that in families, in institutions, although all members have been subjected to the same diet, same hygienic, same sanitary conditions, some only become infected, and among these the type varies very much.

GROUP X. *Chills, Temperature, Relapse.*

CASE 19. Mrs. M., on admission diagnosis of typhoid fever was made. Temperature was 105.2. Quinine and phenacetine, aa .30 were given whenever the temperature reached 103°—which was a daily occurrence, repeating itself during the day,—and although the reduction in temperature was often 3° to 5°, accompanied by weak pulse and some cyanosis—condition successfully controlled by strychnine—it, the temperature quickly ran up again. This high temperature lasted 5 days and then made the usual “step-down” curve, reaching normal the 14th day after admission, and remaining for ten (10) days 98 t. in the morning, sometimes less—and 100 t. in the afternoon. On the 24th day in hospital, from normal in the morning, the temperature rose to 103.5—quinine and phenacetine aa .30 were again given, with result of 3.5 reduction. The next day, a chill said to be slight was reported and temperature rose to 103.8, although quinine and phenacetine reduced it temporarily two degrees, it soon reached 105.4. These two drugs were used daily each time temperature reached 103°. There was no more chill till seven (7) days after the first one—when on the 30th day in hospital there was a pronounced chill lasting 25 minutes in the early morning, followed by a temperature of 106.6 and in two hours another chill lasting 15 minutes and the temperature, which had fallen to 102.8°, rose to 105.6. Quinine and phenacetine were again given the following mid-day, temperature was normal, patient perspiring freely (which often happens after phenacetine). Six (6) hours later there was a chill lasting 15 minutes, rise of temperature to 104.8. A consultation was now held, and the consultant looked upon the case as a possible abscess of liver—the liver was enlarged—and he suggested puncture and aspiration of the organ. This heroic treatment was postponed by the writer, but large doses of quinine 2. daily with carboic acid, .06 tid—(no more phenacetine was given). For six (6) days there were no more chills, temperature varied between 98.4° and 102°, patient feeling very well. Again, seven (7) days after last chill there was a very pronounced chill at 2 a. m., last-

ing 15 minutes with rise of temperature from 101.2° to 107.2°! This was the day following the first voluntary movement, up to this date a daily enema had been given with report of “good results. Only quinine was given and by 2 p. m. temperature had fallen to 99.4° with profuse perspiration. The following day, uncontrolled by any medication, temperature fell from 103° to 97.6°. The next day there was a slight chill with rise of temperature from 90.2° to 104.4°. Quinine was now given in anticipation of a chill or rise of temperature and while there were no more chills, temperature was very irregular, but eventually became normal. There was daily profuse sweating with fall of temperature, and from Dec. 29th, the end of the second month of disease the morning temperature was usually below 98°, frequently 96°, and twice 95° till about end of three weeks more when temperature was perfectly normal and patient made a perfect recovery. During this last stage while quinine was still being given, a general, very marked eruption all over body developed with some edema of skin. Quinine was stopped, Fowler's solution was given and rash gradually disappeared. As no examination was made for malaria organisms in this case it could not be put in group of “malaria-typhoid fever” but it certainly looks as if malaria followed, and it is almost identical with a case described by Thompson—a case of typhoid followed by malaria with a series of chills, fever and sweating.

CASE 20. Miss N. had been ill 4 days at home—on admission to ward temperature was 105.2. Had 2 chills of slight severity immediately after admission with a history of chill first day of illness. No more chills till midday of 8th day in hospital. Temperature had been 105.4; next day a chill, temperature 100, followed by rise to 104.4. This kept up daily for about 7 days, when there were no more chills, but temperature gradually crept up higher, till on the 22nd day in hospital (26th day of reported illness, and 7th to 8th day after first chill). it reached 106, preceded by marked delirium and followed by three intestinal hemorrhages with good amount of fecal matter. During the next week temperature remained quite high, almost constant-

ly 105—pulse was very rapid and very weak, never below 120, often 140, reaching even 170, with threatened death of patient. This was prevented by the energetic and untiring activity of the house staff, one of whom remained constantly at the bedside with patient till the crisis was over. At the end of the 4th week the temperature commenced to drop slowly, there were no more chills or irregular rises or falls and patient made a perfect recovery.

Interesting in connection with this history of chills and fever, with no discoverable cause, is the fact that long after the last chill and while temperature was dropping, patient developed a suppurative otitis media, threatening mastoiditis, and several quite deep abscesses at sites of hypodermics which, although surgically treated healed very slowly.

CASE 21. Mrs. H., had been ill 2 weeks before admission to hospital. Diagnosis, typhoid fever. Temperature, 104+. Gradually fell presenting a classical "step-down" curve, and at end of second week in hospital morning temperature was 98 and highest afternoon temperature 100 plus. This obtained for almost one week, when for no traceable cause commenced to step up, typical 1 to 2 degree rise. The following day with a morning temperature of 102 there was a chill, the first during her illness, the middle of the 6th week of the disease and temperature rose to 106.2 no cause could be found. For the four succeeding days there was a gain, a classical "step-down" temperature curve chill, temperature fell from 102 to 98 to rise immediately to 105.4, this followed by another chill, fall of temperature to 99.5 succeeded by a rise to 106, again for five days there was a very irregular fall of temperature; then with a chill lasting 25 minutes, from 99 the temperature rose to 105.4 to fall, uncontrolled by medication to 99. The next day there was a rise to 106.2. No chill was reported preceding or following this last rise, but it fell to 97+, remaining for 48 hours between 98+ and 99+, when again a chill with a rise to 104, and again for two days having fallen to 99 it remained for two days between 98 and 99, when from 98 with a chill lasting 45 minutes it very abruptly reached 106.2 to fall almost immediately to 97. From this on,

for nearly four weeks, the morning temperature was almost always normal, the afternoon or evening temperature being irregular between 99 and 102, but very frequently only 99, usually 100, when suddenly, from no discoverable cause, no chill, temperature rose from 98.4 to 105.6, to drop to 99.2 same day. No chill. Next day highest temperature was 103.2, lowest 99 in the evening. The following day chill of 20 minutes, temperature 98.8 followed by a rise to 106.4, falling within a very short time, so that at 6 P. M. it was 97.8. Now all medication was stopped, quinine and methylen blue which had been given with the possible diagnosis of malaria, although blood examination at no time showed any mal-organisms. Four days after the last chill temperature was normal—patient was up, and left hospital perfectly well. Early in attack a Widal reaction was obtained.

As to cause of chills and unusual temperature in this case none was ever found, although very careful examination of every organ was made. At one time as liver was somewhat enlarged and there was slight jaundice and tenderness, one consultant made a diagnosis of abscess of liver, but examinations after each chill and rise of temperature did not show any increase of liver or of the jaundice or tenderness. Another consultant diagnosed malaria or possible suppurating thrombosis of portal vein, perhaps septic embolus in liver, due to what seemed a mixed phlebitis of which patient complained as a pin prick or cramp in leg during the first days in hospital, many weeks before chills developed. Dried blood films showed no malarial organisms. Blood cultures made several times showed only on two occasions a weakly growth of staphylococcus pyogenes aureus—at no time was there a leucocytosis. A cervical polypus which had caused at first considerable hemorrhage was also carefully investigated as a possible cause of sepsis, but with negative result. In fact, when patient left hospital, this polypus had nearly disappeared. During whole course of this stormy attack patient slept well, ate, and enjoyed whatever nourishment was allowed her and clamored for more, was remarkably cheerful, well disposed, taking a very great interest in her case, enjoying the con-

sultations—watching the effect of each change of treatment, and never anxious about her condition.

Remarks—In connection with the temperature of this case, the highest being 107.2, the lowest 95.6, it is interesting to note that in Johns Hopkins Reports for 1895, Osler mentions 107 as the highest temperature of any case treated in the hospital, and this temperature preceded death. And in the reports for 1900 he speaks of 94.5 as the lowest temperature and this was after a hemorrhage. He speaks further of these extreme variations of temperature, a difference of 8 degrees in 12 hours. Also of a persistent *hyperthermia* during convalescence, lasting from 7 to 10 days, especially after protracted cases with much emaciation, and considers that they signify nothing. Curschman says no typhoid fever case has run its course if the temperature has not been subnormal. If it is typhoid fever and there is no subnormal temperature, a relapse may be expected.

The writer looks upon a subnormal temperature as positive confirmation of disease being typhoid even if other corroborative symptoms are absent. Curschman says "during defervescence there may be marked fluctuations of temperature 5 or 6 degrees preceded or accompanied by chills—which might cause much anxiety if not recognized as only a peculiar form of reduction curve and not as an indication of complications."

Howland says "Chills are not uncommon, but rarely repeat themselves; never of very great severity; they occur independent of a complication, and have no significance." A comforting fact for a physician to have in mind, but after a most careful examination eliminates positively a com-

plication should the practitioner allow himself this comfort. Notwithstanding the assertion that the chill rarely repeats itself, he reports one case having had 14 chills, each chill followed by a rise of temperature. As to the cause of these chills, not related to complications, many explanations may be offered, and the fact that many can be considered as quite suggestive shows how undetermined the cause really is. As Curschman claims that all varieties of temperature are to be considered as an expression of bacterial intoxication, these chills and temperature occurring in the course of a typhoid fever may be due to (a) slowly healing ulcers or (b) reinfection from distant organs or tissue, such as the adenoid tissue of the mucous membranes, in which typhoid bacilli linger, as proved by their presence in the stools long after disease has subsided, for instance, such as the mucous membrane of the kidneys as bacilli are found in the urine long after disease has subsided; such as the mucous membrane of the gall bladder which has come to be looked upon as quite a temporary nidus for the typhoid germs, they having been demonstrated here at varying intervals of time after the disease had disappeared. What keeps them quiet, inactive for a length of time and then suddenly makes them so active is a question to be answered in the future. Again, there are some authorities who look upon these chills and temperatures as just a part or (c) feature of the disease, like any of the other symptoms; and others again as due to the (d) treatment especially the modern anti-pyretics which depress the temperature for a time only to have it rise again with more or less pronounced chill. Janeway, very emphatically says: "Drop your antipyretics

and the chills will drop." Errors of diet, and faulty elimination of waste products are also to be thought of as causative factors. In the writer's opinion it is often due to an unevacuated intestinal tract, as so frequently the physician is misled by the nurse's report of "good result" following enema—this "good result" meaning that the fluid was copiously returned so well colored that it was mistaken for a large thin fecal movement. Rectal examination made soon after such a report so often shows a packed bowel,—and such satisfactory relief, local and general, follows the emptying of the bowel either by laxative or properly given enema—according as condition suggests—that the writer feels justified in pointing to this auto-intoxication as a most probable cause of chills and rise of temperature in these cases.

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THE RELATION OF HEADACHES TO ERRORS OF REFRACTION: A STUDY OF THREE THOUSAND CONSECUTIVE CASES FROM PRIVATE AND HOSPITAL PRACTICE.

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When we consider the simple fact that about 60% of the patients that consult the ophthalmologist do so on account of headaches we will not be surprised to learn the importance he attaches to the study of the relation of headaches to errors of refraction and disturbances of the muscular apparatus of the eye. In fact the ophthalmologist is as much of a headache specialist as an eye specialist, for the bulk of his private patients do not complain so much of their eye troubles as they do of their headaches and dizziness and other reflex symptoms of a neurotic nature. These symptoms result very often from the ulterior sequelae of the strain of the accommodation in the effort to overcome errors of refraction or from the struggle required to maintain binocular single vision when there is some disturbance in the equilibrium of the extramacular apparatus.

In order to appreciate the anomalous states of refraction and their relation to headaches we must of course have a physiologic standard of a normal visual apparatus. A normal eye consists of a dioptric apparatus so constructed that parallel rays of light pass its transparent mediae and come to a focus on the fovea centralis without any special effort of the accom-

modation. Here the range of accommodation for the age of the individual is in proper ratio, and where both eyes converge equally and normally to the physiologic near point. An eye like this will perceive a clear image from at infinity and at the same time the binocular near point will be approximated without an extra effort.

Such eye while the most ideal is rarely found however, and yet a deviation even of a slight degree from this rather arbitrary standard may and does give rise to serious discomfort. In fact we often find the deviation in inverse ratio to the reflex disturbance it causes. This must be explained on the principle of susceptibility or predisposition resulting from a reduced vital power of resistance. For usually this class of patients have a low degree of vitality as a result of some constitutional weakness. The headache like the other symptoms of asthenopia is of a reflex character, and often manifests itself in connection with other symptoms, such as dizziness, irritability culminating in neurasthenia, vertigo, anorexia and spasmodic contractions of the lids.

The headache due to an error of refraction or other ocular disturbance is not of any special variety and is not always limited to any special area but may be of a diffused variety. This much however is certain that nearly all frontal headaches and in the region of the superciliary ridges are caused by some ocular anomaly refractive or motility disturbances. But the positive proof of the causal relation from the ophthalmic point of view depends entirely upon the therapeutic test which cures the condition by the correction of any error of refraction and the adjustment of the muscular anomaly. The fact of the exist-

ing error of refraction in cases of headache is not sufficient evidence of its causal relation. In some cases even though the cause is within the ocular disturbance the headache does not disappear immediately after the error of refraction has been corrected by properly adjusted lenses, especially is this the case when the condition has been neglected. One must not therefore come to the erroneous conclusion and think that the glasses are of no value for quite often it happens that after the glasses are worn for a short time the headache disappears.

True migraine is not caused by ocular defects although it may be exacerbated, prolonged and the intervals shortened by them. I have not been able to establish any causal connection between migraine and errors of refraction. Not a single case of migraine have I cured by glasses which carefully corrected the existing error of refraction. I have however prolonged the interval of the attacks. All migrainous cases should however be examined by the ophthalmologist and glasses carefully prescribed if any error of refraction is demonstrable, not with the impression of curing the condition which is most probably of constitutional origin but with the expressed intention of removing any unnecessary nervous strain which is apt to produce reflex headache during the free intervals of the migrainous attack. Migrainous patient may sometimes suffer from a reflex headache independent of his periodic attacks and usually in these cases the ordinary reflex headache is apt to be of a severe type sometimes simulating the true migrainous type. Errors of refraction therefore in these cases are also of some etiologic import. The same holds good of ophthalmic migraine, ophthalmoplegia mi-

grain and psychical migrain which in reality are terms more confusing than descriptive. Considering the various types of refractive errors that give rise to reflex symptoms especially headaches we are often surprised to learn that high errors of refraction are sometimes borne by patients without any symptoms of reflex irritation while errors of a low degree will be the cause of marked symptoms of asthenopia. In some cases the mode of life of the patients, his occupation and habits, will offer an explanation, in others no explanation can be found for this interesting and rather paradoxical phenomenon.

In many cases the headache is also accompanied by local symptoms of irritation such as redness of the lids, itching pain in the eyeball, especially is this the case after close application. They are not however necessary concomitants for indeed very often the eyes are entirely free from any symptoms of irritation. In analyzing 3,000 consecutive cases from both hospital and private practice I found that 45% consulted me on account of symptoms caused by eye strain, headache being the most distressing one. Thirty per cent. of this number asked relief from headaches there being no other symptoms, while the rest showed marked neurotic symptoms as well as pain in the eye ball and symptoms of local irritation. The relation of the sexes showed rather a predominance of the male 55.5%.

Occupation plays an important part in the relation of eye strain to headaches, Tailors, weavers, dressmakers, engravers, bookkeepers whose work is at close range are predisposed to eye strain. It is well however to bear in mind that 28% of those

asking relief from headache were married housewives doing general housework, but even in these cases I found that they were doing considerable sewing and that very often the headache came after the sewing process. The proof of the therapeutic test could not be obtained. Patients do not always come back to tell that their symptoms were relieved, and in cases where no relief is given they often quietly turn to another institution for treatment. I feel however sure that I am correct in stating from a careful observation that fully 65% of the hospital patients and fully 80% of my private patients have been relieved from their headaches by the careful correction of errors of refraction. The reason for this variation must be found in the fact that private patients possess a higher degree of intelligence, their errors of refraction can be corrected more precisely and they are more apt to follow the advice of the ophthalmologist.

The nature of the ocular defects responsible for headaches as well as other reflex nervous symptoms is varied, and in most cases there is also some constitutional weakness as a contributory factor. Simple myopia of a low degree may become even progressive without giving rise to headaches. Occasionally headaches in these cases is complained of but the cause is usually not the refractive error but rather a disturbance is the muscular equilibrium and exophoria. Myopic astigmatism is quite often the cause of headaches and other symptoms of eye strain. The errors of refraction mostly responsible for headaches are hyperopia and hyperopic-astigmatic and mixed astigmatism. It is in these cases that the eye strain is most manifest for here

indeed the ciliary muscles are most active and the constant contraction of these muscles overtaxes the nerve force.

A very important factor in the causation in addition to errors of refraction is a disturbance in the balance of the muscular apparatus of the eye. It is well here to call attention to the insufficiencies of the internal rectus for convergence. There is usually a muscle balance for distance as demonstrable by all known methods of examination but for fixing near points one eye fails to converge to an equal degree. Occasionally an attempt may be made successfully when both eyes will converge and fix the object for a second only to notice that the one will soon deviate and lag behind. In these cases we do not deal with an anatomical anomaly or an insufficiency of nerve force but rather with an error of refraction which disturbs the relationship between the accommodation and convergence and usually the underlying error is an anisometropia where the refractive conditions of the two eyes are not alike. These cases are of course amenable to treatment and the correction of the errors of refraction always gives the desired relief. School children especially are subject to headaches as a result of refractive errors and it is rather difficult to convince parents that there exists any relation between the headache and eye strain for they cannot see any abnormality in the child's eye. They can often notice that their children are myopic, but are of course not capable of judging a latent hyperopic or astigmatic condition. As a matter of fact, however, most children suffering as a result of eye strain are not of the myopic, but rather of the hyperopic simple compound or mixed astigmatic type. To these children school

life becomes a heavy burden for they struggle with a physical abnormality that retards their progress and often the physical unbalance manifests itself in mental deficiency. It is well in this connection to mention that the advertising optician has still a great hold on the public which is regrettable indeed for it is an absolute impossibility to refract the young without a mydriatic. Of late these refractionists have taken advantage of the absence of laws regulating the practice of this ophthalmic branch of medicine with the passive consent of the county, state and ophthalmologic societies. They are no longer to be found in the stores only selling glasses under name of optician, but they ply their trade in private offices with regular office hours under the assumed title of doctor, and, of course the unsophisticated cannot differentiate them from the regular ophthalmologist. To them the sign doctor is sufficient evidence—as it should be—of a regular college diploma and state license. Thus the people are easily misled and the progress of ophthalmic therapeutics is retarded. The profession is largely responsible for this condition of affairs. There are even to-day medical men who do not think refraction to be a branch of medicine. As a matter of fact they were not instructed in their respective schools on the subject of refraction, and many of them to-day send their patients to these advertising refractionists. The remedy is in the hands of the profession and the ophthalmologic societies should try to remedy the evil as far as possible. Two methods suggest themselves, i. e., the public press and the proper legislation.

The public press, whatever may be said to the contrary, is a potent factor of

education and is always willing to enhance the interest of science. The newspapers may take no interest in factional fights, but their columns are always open for anything that concerns the interest of the public. Through their columns the public could be educated to know that the display of a big eye in the window does not constitute a college diploma, does not mean state license for the practice of ophthalmology. The public should be informed that these men are using the title, doctor, under false pretenses so as to ensnare the innocent public; that they are plying their trade at the expense of the public and to its detriment; that these assumed doctors know nothing of anatomy, physiology, pathology, physiologic optics; that they cannot differentiate between weak eyes requiring glasses and weak eyes requiring medical aid; that the proper function of the optician is to grind and adjust glasses, but not to prescribe them. The press, I am sure, will open its columns, for the interests of humanity demand that these evils be eradicated.

The medical profession should request such legislation as will prevent this class of opticians mostly ignorant foreigners, to use the title doctor unless so obtained from chartered colleges. This is not class legislation; it is simply a law that will prohibit the abuse of the title doctor which some people use as a cover to defraud the public. It seems that in our endeavor to lead an ethical life we fail to protect ourselves against the charlatans and quacks, using the honorable title doctor for selfish purposes.

All patients suffering from headaches especially of a chronic variety should be carefully refracted and any error of re-

fraction carefully adjusted by an ophthalmologist. The time has come when the practicing physician will know that this is the rational procedure and the ophthalmologist need no more go to extremes in exaggerating the value of glasses; he need not claim that all headaches are cured by it, all he has to say that in the treatment of headaches the correction of errors of refraction is the most rational procedure.

917 Spruce St.

THE CAUSES AND TREATMENT OF NASAL HEMORRHAGE.¹

BY

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It is a recognized fact that many disorders apparently of local origin are closely associated both in cause and effect with general constitutional conditions. It is for this reason, therefore, that the specialist must know a great deal more of the science and art of medicine and surgery than that relating to the anatomical structure in which he is most immediately interested. This is especially significant in the successful treatment of all nasal and laryngeal disturbances, but needs to be particularly emphasized in those insidious types which recur from time to time, the causes of which are relatively obscure.

The word epistaxis signifies a great deal more than "bleeding from the nose," and in many cases its treatment must depend upon more thorough scientific effort than that of thrusting a pledget of cotton or a

¹Read before the Washington Heights Medical Society, May, 1908.

strip of gauze into the nasal fossa. The specialist who overlooks this fact deserves much greater censure at the hands of his professional brother than does the general practitioner whose long years of observation have developed his diagnostic sensibilities along a path of generalities.

Anatomy. The arterial supply of the nasal cavity is derived from the ophthalmic and internal maxillary branches of the internal carotid, and from the superior coronary which is a remote twig of the external carotid. The ophthalmic gives off two branches—an anterior and a posterior ethmoidal the courses of which are briefly as follows: The posterior ethmoidal springs from the ophthalmic as that artery approaches the inner wall of the orbit. It passes through the posterior foramen in the ethmoid bone, supplies the posterior ethmoidal cells, and gives off nasal branches which descend through the cribriform plate and are spread over the upper outer wall of the nose. The anterior ethmoidal artery accompanies the nasal nerve through the anterior ethmoidal foramen, supplies the anterior ethmoidal cells and frontal sinuses and gives off other nasal branches distributed similarly to those derived from the posterior as already described.

From the internal maxillary are derived the naso-palatine, the infraorbital and alveolar arteries. Of these the naso-palatine is the most important. It enters the nasal fossa at the posterior portion of the superior meatus and divides into an internal and an external branch. The internal passes obliquely downward and forward along the septum nasi supplying its membranous covering and anastomosing ultimately with the descending palatine. Two

or three external branches supply the outer nasal wall, the antrum of Highmore and the sphenoid and ethmoid cells. The infra-orbital artery in its passage along the infra-orbital canal gives off a few branches which supply the mucous membrane lining the antrum. The antrum also receives a few tributaries from the alveolar or posterior dental artery. The inferior artery of the septum which is derived as we have seen from the superior coronary supplies the anterior portion of the septum and hence becomes responsible for many cases of epistaxis from the so-called "hemorrhagic area" of the nose.

Concerning the venous supply of the internal nose it is unnecessary to speak in detail. In general the veins accompany the above-mentioned arteries, and are distributed over the lower part of the septum and over the inferior and middle turbinates in the form of a copious plexus. Some veins pass through the spheno-palatine foramen, others join the facial and ophthalmic veins and a few contribute their contents to the internal veins of the skull.

Etiology. As to the *causes* of epistaxis, these fall more or less completely under the headings of *disease*, either local or constitutional, *injuries*, and *new growths*. A few cases must be classified as *idiopathic*.

Local Disease. The acute infections not infrequently cause a bloody discharge from the nostrils although the amount is usually small. Of these, diphtheria and the various streptococcic inflammations are most commonly met with. The pathology of these conditions when found in the nose is quite the same as that which obtains elsewhere; viz.: irritation, increased reaction, diapedesis of red and

white cells, organization, destruction of epithelium, hemorrhage.

Septal ulcer from whatever cause, sometimes produces considerable bleeding.

Foreign bodies which are found commonly in childhood act like any other irritant in causing nasal hemorrhage.

The influence of changes in atmospheric pressure such as in balloon ascensions and mountain climbing may cause an epistaxis which does not always cease immediately upon a return to the usual habitat.

General Causes Hemophilia is occasionally responsible for very protracted nasal hemorrhage. Here treatment is very difficult and must depend largely upon general systemic measures.

Vicarious menstruation is occasionally seen. It is seldom alarming and usually one should leave it alone directing his effort chiefly to a restoration of the normal uterine condition.

Syphilitic gummata and ulcerations sometimes erode an artery and produce rather marked bleeding.

Typhoid fever is very often ushered in by epistaxis. Osler lays special stress upon this symptom in combination with temperature, malaise, pea-soup stools and tympanites.

In association with an arterio-sclerosis, bleeding from the nose is often an important prodrome of cerebral hemorrhage, embolism or thrombosis. I have recently seen two such cases one of which exhibited the symptoms of thrombosis as given by neurologists. The other developed a typical apoplectic seizure after bleeding rather moderately for 24 hours.

Chronic anemias of every kind are said by Osler to be associated with epistaxis. He also makes special mention of telangiect-

tases such as are seen in the faces of many alcoholics and believes this undue dilatation responsible for intra-nasal bleeding.

Recently I have seen a case of mitral incompetency in a man of 60 who is troubled with frequent epistaxis lasting for three or four days at a time. He wished to be operated upon for a deflected septum, but I advised against this inasmuch as the slightest touch of the septum with a cotton applicator produced a fair amount of oozing.

A few writers have described cases of chronic nephritis, gout, and general plethora as responsible for nasal hemorrhage.

Injuries. Fracture of the septum is a potent cause. One should always endeavor to find out if the injury extends to the perpendicular plate of the ethmoid, as it is this bone which is usually involved in fractures of the anterior fossa of the skull with injury to the ophthalmic artery and its anterior and posterior ethmoidal branches.

Post-operative hemorrhage is sometimes very profuse. It should not occur if undue laceration of tissues has been avoided and if due care has been taken in packing against the operative field.

Habit, nose picking, and the use of matches, toothpicks, &c. for the removal of crusts in which practice many patients indulge is a common cause of nasal hemorrhage. Occasionally the patient is so vigorous in his attacks that he succeeds in securing a good-sized septal perforation. Unskilful instrumentation during examination, spraying &c., may give rise to bleeding, which, however, is seldom of any importance.

New Growth. Neoplasms in the nose are not very frequent. They are chiefly

sarcoma, epithelioma, chondroma, and polypi, and give rise to hemorrhage usually from pressure necrosis or from active breaking-down processes due to their rapid development.

Idiopathic. There are certain cases which fall under no category and which we must thus classify. Occasionally at puberty there are recurring attacks of epistaxis in both sexes. Just what the pathology of the condition is at this time is so far unknown.

At the Vanderbilt Clinic I once had a case of epistaxis associated with atrophic cirrhosis of the liver. The patient complained of bleeding every time he washed his face, and all efforts failed to ameliorate this condition to any extent. It may have been merely a coincidence, and entirely independent of any relation of cause to effect.

So-called "renal epistaxis" has been described, but as it may occur without any obvious pathological lesion in the kidney it is certainly misnamed.

Treatment. The first thing to enjoin upon the patient is absolute quiet in a reclining posture. Most people will hold the head forward, blow the nose to remove blood clots, and thus assist gravity and the *vis a tergo* in pumping the arteries as dry as possible. The physician should not allow a patient to do this, but should insist on managing the case himself assuring the patient that he is in no danger whatever. If ordinary simple measures do not stop the bleeding then spray out the nose, making sure that it is free of packing, clots, &c., with a solution of cocaine and adrenalin. A good formula is the following:

Cocaine hydro-chloride, Gr. V., adrenalin chloride M. XX., water to make a half ounce. This when used properly will tem-

porarily check the bleeding, and enable one to look for the focal spot, which fortunately is often far enough forward to be readily seen. It may be situated high up, or posteriorly, or between the turbinates in the antral region.

In spite of the opinion of many excellent rhinologists it does not seem safe to leave the patient after simply using the cocaine-adrenalin spray. Reaction is quite sure to take place and the hemorrhage recur.

One has recourse to several good methods at this stage. Styptics are sometimes useful but only in selected cases. Tincture of perchloride of iron, tannic acid, alum, zinc, pyrogallol acid and silver nitrate have all been tried. The galvano-cautery or chromic acid may be used if the bleeding point is very small and within easy reach, but it must be remembered that all these agents destroy sound tissue; and it should be our purpose not to destroy but to aid the regeneration of the mucous membrane covering the hemorrhagic area.

Mechanical agencies are surely the most effective. Simpson's tampons or Bernay's sponges are convenient, but their use engenders a great deal of traumatism and the pain is excruciating unless the fossae have been made absolutely anesthetic. Moreover they cannot be shaped to fit the nasal cavity. Posterior plugging through a Bellocq's cannula has fallen into disrepute and I believe rightfully so; for it is very seldom necessary, perhaps never, save in hemorrhage following adenotomy.

Minor measures such as external pressure on the nose, cold and hot irrigations, ice compresses to face and neck are useful but should not be relied upon.

Ardenalin or adrenalin inhalant alone are

inadvisable inasmuch as the resultant reaction is likely to exaggerate the condition rather than to improve it. If blood pressure is normal adrenalin may be administered internally as 5 drops in a little water every 15 minutes till relief is obtained. Ergot by the hypodermatic or the internal method may be used with an eye to arterial hypertonus.

The best method and one which it is possible to carry out in most cases is the use of gauze packing saturated with oil. This measure should be carried out only after the hemorrhage has been temporarily checked with the cocaine-adrenalin spray. The credit for this idea belongs exclusively in so far as I know to Dr. John Leshure of New York City who first demonstrated it to me. Strips of sterile gauze $\frac{1}{2}$ inch wide are soaked for some minutes in sterile albolene, and then under a good light and with due caution to prevent trauma are packed as far back into the fossa as is necessary. If the hemorrhage comes from an area on the septum, both fossae should be occluded by this means in order to secure firm lateral pressure. A necessary qualification is skill in the use of one's hands and headlight; and the manœuvre, however simple it seems, should only be attempted by one who possesses this skill. The patient should then be supplied with two ounces of albolene and a glass dropper, and instructed to make frequent applications of the oil while in a recumbent position. This tends to heal the membrane and aids materially in removing the gauze which should be done very carefully at the end of 36 hours, but only in the presence of all necessary facilities for repacking. I have yet to see a case of nasal

hemorrhage that could not be stopped by this method.

Broadway at One Hundred Forty-Fifth Street.

THE ADVANTAGES AND DISADVANTAGES OF THE INTRAMUSCULAR INJECTION METHOD OF TREATING SYPHILIS.*

BY

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By way of an introduction, or preamble, a mild apology must be offered, for writing a paper on so hackneyed a theme;—still this is atoned for somewhat, by the fact, that a subject of this kind, will be of greatest interest to the greatest number.

So much has been written about this form of treatment, that it is hardly possible to tell anything new, and these remarks must be taken in the nature of a review. A faithful endeavor has been made to cut out all redundant material, and to present only hard bare facts; how well this has been done is left to the reader's judgment and leniency.

Everyone is well aware, that there are four main ways by which mercury is introduced into the system—namely: *Fumigation—Inunction—Ingestion and Injection*. Fumigation is practically obsolete, but the latter three all have their advocates. Ingestion is the plan most popular in England and the United States, and if my in-

*Read before the Plainfield Clinical Society of Plainfield, N. J., and the Eastern Medical Society of New York City.

formation is correct, the inunction treatment, holds the place of honor in Germany and some other parts of Continental Europe. It is with the injection treatment that this paper deals and the others will only be mentioned in comparison.

There is a great divergence of opinion regarding this method of treating syphilis. Since its introduction, which is accredited to Scarenzio of Pavia, it has been a much debated question.

Its popularity is due in great measure to Lewin of Berlin, but not until late years, has it been so generally taken up by the profession.

My own views on the subject have been previously expressed in a paper of several years ago, and are well known among my colleagues and associates in dermatological and genito-urinary practice in New York; since that time they may have been modified slightly, but in the main remain unchanged.

Making the injections subcutaneously was the customary mode with many medical men in the past, therefore it acquired the name, hypodermatic. This plan has justly fallen into disrepute, as it is likely to cause sloughing. The method in vogue at the present time is to make the injection deep into the muscle, and therefore the term intramuscular is used instead of hypodermatic.

After the injection is made the theory is, that the mercury will diffuse itself in the tissues, and gain access to the blood stream by a process of dialysis.

There are many reasons why this method of treatment should not be used as a routine, and in the writer's opinion, it is inadvisable to so adopt it, although some dermatologists hold contrary views.

In ordinary plain cases of syphilis, the old method of mouth administration seems to me the best; it is the easiest and simplest of all methods; it is well borne by the majority of patients, it being rather unusual for them to complain; and in comparing results in both private and a rather large hospital practice, it is found that the older forms of treatment answer the purpose equally as well, if not better.

Nevertheless in selected cases the beneficial effect of the drug given in this manner is unquestionable. It seems particularly suitable to those rebellious relapses, which are at times encountered by every physician; and also when it is urgent, that the patient be brought quickly under the influence of the drug.

Two of the stubborn tertiary lesions, to which chief reference is made, are the well known palmar syphilide and chronic syphilis of the tongue.

Some of the conditions, in which it is necessary to rapidly mercurialize the patient, are—when severe ulceration in the throat and around the eye threaten great destruction of tissue; when a gumma of the palate is on the verge of causing a perforation; in brain syphilis; and when it is desirable to quickly conceal the disease, should it be on the exposed parts of the body. Other indications for the use of the method, are when the ingestion method has produced disagreeable gastrointestinal symptoms, and when other forms of treatment cannot be tolerated by the patient.

In contemplation of treating a case of syphilis by intramuscular injections, there are two main points to be considered: (1) Whether the method is best suited to the case in question. (2) Should a soluble or insoluble salt of mercury be employed.

In deciding point number one, we are led to consider the advantages and disadvantages of the plan, which will be enumerated as briefly as possible. The *superior reasons* for its use are the freedom from digestive disturbances, the stomach being left ready for other medication if desirable; and the rapidity of action of the drug, which seems magical in some instances; the rapid fading away of the objective manifestations of the disease proves this point; lastly, the accuracy in the dose.

The *Objectionable Features*: Pulmonary embolism may occur should some of the menstrum by accident be injected into a vein. Although an occasional death has been reported, this complication is rarely fatal; however the pulmonary and cardiac symptoms are somewhat alarming. Should mercurial ptialism be produced, it is rather hard to control, when an insoluble salt is used. Indurated tissue nodosities often follow the use of insoluble preparations. Abscess and sloughing are also among the possible complications. A great many patients object to the treatment, on account of pain, enervation and malaise, which frequently follow the injections. This statement about the pain is contradicted by a number of physicians, but in my experience it is customary for many patients to complain of this.

After the foregoing argument has been briefly reviewed in one's mind and it is deemed wise to employ the injections, then we are brought to the second question: Should a soluble or insoluble salt be used?

Great diversity of opinion prevails here also. The insoluble preparations have one *chief advantage*, which is the *infrequency* of administration, as it is necessary

to give them only at weekly and under some conditions at fortnightly intervals. The *disagreeable features* are numerous; they store up a regular magazine of mercury in the tissues, and the amount absorbed cannot be determined; they cause indurated tissue nodes, which frequently require weeks to be absorbed. The possible resulting difficulties (fortunately these are rare) are mercurial toxæmia, abscess formation, and pulmonary embolism; should the former of these complications ensue and become uncontrollable, the node would have to be excised. If abscess formation resulted, incision and drainage would be necessary; this would be a very disagreeable sequel, especially when the mercury has been so deeply deposited.

Pulmonary embolism has already been referred to.

The soluble salts also have one great *disadvantage*, which is, they have to be made daily, or every second day at least, to produce the desired effect. This feature seems trivial upon cursory view, but it is an extremely important one from a practical standpoint. Frequent visits to the physician entail both time and expense and when the treatment is proposed, it often elicits complaint; otherwise the use of the soluble preparation is attended by but few, if any of the disagreeable effects already mentioned. No indurated nodes follow their use; salivation, should it occur, is not uncontrollable, and a precise dosage is obtained. The frequency of injection is the only unpleasant feature in their use, and they seem to me to be preferable to the insoluble salt.

A list of some of the preparations used for injection purposes is as follows:

Soluble:—

Bichloride.
Alaninate.
Formamide.
Succinamide.
Peptonate.
Benzoate.

Insoluble:—

Calomel.
Salicylate.
Gray Oil.
Yellow Oxide.

The technique: For the soluble form of the drug an ordinary hypodermic syringe can be used; for the insoluble, a somewhat larger instrument is preferable. The needle should be about one and a half inches long and have a fairly large lumen.

The abdomen and back have been used, but the buttocks are the preferred locations for the injections. The needle is boiled and cooled in a 1-20 carbolic acid solution. The penetration is done swiftly, the needle with a quick thrust is buried to the hilt in the glutei muscles. The fluid is then discharged very slowly. Care should be exercised to get all the air bubbles out of the chamber and precautions taken not to enter a vein. It is best after the puncture is made to remove the syringe from the needle for a moment; if a drop of blood is visible, a new puncture must be made; if not, the syringe is re-fastened and the operation finished. It is a good plan to have a separate needle for every case; this can be done in private practice with but a small expense.

Individuals suffering from cardiac and respiratory troubles, and those much debilitated should not be subjected to the treatment.

In conclusion, it must be admitted, that most of the complications or sequelae spoken of in connection with the treatment are, in the main, theoretical and very rarely occur. They have, however, happened occasionally, and in a paper of this kind, it is right to mention them.

56 East 25th St.

DISCUSSION.

Dr. Stark said that the intramuscular treatment of syphilis was one of the most marked triumphs in modern therapeutics; it had shorn the disease of many of its ravages, and if the patient could be controlled, it would almost positively prevent the appearance of secondary manifestations of the disease or, at least, would considerably ameliorate them. And, if done properly, under strict antiseptic precautions, as regards patient, physician's hands, and the syringe, the treatment was attended with very little risk. In fact, the injection of mercury was precisely the same method as the hypodermic injection of any other medication; that the same rule applied to a hypodermatic injection with an ordinary hypodermic needle for the usual purposes. He believed that the dangers were minimized by resorting to the soluble preparations, such as a one per cent. solution of bichloride of mercury, giving one maximum dose daily, until thirty had been given. He selected soluble bichloride for the same reason that would prompt 90% of those present to employ bichloride if they had to give it by the mouth. And he ventured to say that for the same reason not ten per cent. of the gentlemen present would use, hypodermically, the salicylate or the tannate. The one danger of inserting the needle into a vein, could be obviated by withdrawing the barrel from the needle, to ascertain if this procedure were followed by a flow of blood. The barrel should then be reinserted. In this way the danger of pulmonary embolism could be obviated, for he believed that there were few such cases on record. I believe whenever cases of pulmonary embolism were reported, the insoluble preparations were employed.

The danger of salivation is almost *nil*, as we know the exact dose and are on guard for the premonitory signs of mercurialization. I have observed as a sequel to this method of treatment, that the good effects are more lasting, as I have to-day several syphilitics under my care who were treated by this method, and I must say the syphilitic phenomena rarely put in an appearance, and whenever they do, it is in a lesser degree. I recommend that the intramuscular method be the one of election.

Dr. Trimble said, in closing the discussion, that he had very little to add to what had

already been said in his paper, except that he was glad to know that some of the members agreed with him in his preference of the soluble over the insoluble salts. Although he was aware that a number of men used the injection treatment as a regular routine, he still believed it should be used only as an exceptional method. Dr. Lapowski's suggestion to aspirate when the syringe was removed from the needle, to see if blood flowed, was a good one, as all suggestions as to carefulness and precaution were good; still he did not think this was absolutely necessary. After waiting a moment, if no blood exuded through the needle, it was usually safe to continue the operation. He agreed with Dr. Lapowski that inunction was one of the best forms of treatment for syphilis, but he did not think any one form of treatment should be used in every case. The method best suited to each individual case was the one to use. In conclusion he said the opinion prevailed to some extent that whenever a case did not do well on the other forms of treatment, it surely would resolve under injections; this was not always the case, as numerous instances could be mentioned where the injection failed; a case in point was a recent one at the New York Skin and Cancer Hospital. A young man with an ulcerating syphillide of the lower lip, which was extending very rapidly, had been given about half a dozen inunctions without effect and ten injections before coming to the hospital, with no effect at all, and the lesion resolved immediately under very small doses of mercury and the iodides given by the mouth.

ACIDEMIA AND AUTOINTOXICATION.

BY

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These two most insidious and common diseases or conditions are especially serious because their onset is so often unnoticed and their progress unsuspected until material damage has been done. Usually found together, they are unfortunately becoming more common in this country.

To speak more accurately acidemia is one of the many forms of autotoxemia which finds expression in divers ways. All the various manifestations, however, give positive evidence of faulty digestive processes, defective metabolism and incomplete elim-

ination; and are caused primarily in many instances by hepatic insufficiency.

These diseases are found to a greater or less extent in sedentary men and women. In a series of urinary examinations it is surprising to note how many specimens respond in a marked degree to the test for indican and almost invariably present a high acidity.

The first evidence of acidemia is usually a feeling of dullness or laziness, with an occasional headache. The individual complains probably of "not feeling well." He is, of course, not yet sufficiently inconvenienced to consult a physician, and the condition is allowed to gradually become worse. The bowels are always quite irregular in action, at times moving too freely and again being moderately constipated. Later the breath becomes foul, the tongue coated, the stools bad smelling, often having an offensive, putrid odor, and in many patients, dark rings form under the eyes.

The effects on the temper are often marked, and persons previously kind, affable and agreeable become morose and show "streaks" of ill-temper and rudeness. The mind is not as clear as before, and the afflicted individual often finds it hard to recall names or data that were formerly quite familiar. Occasional pains are felt in various parts of the body, usually varying quite a good deal in severity and persistence. These may be ascribed to "a touch of rheumatism" or "just a little cold," and are naturally treated in a hap-hazard manner with little or no lasting results. Things go on from bad to worse until some neuralgia, arthralgia or other acutely painful condition causes the sufferer to demand the physician's attention. Should he be fortunate enough to secure a thorough physical examination, no serious conditions are

brought to light, unless some other disease-process is also present. He receives as a rule a more or less brisk cathartic and is reassured by the usual "You'll be all right in a day or two."

If, however, the urine should be examined, several important departures from the normal will be noted. The amount is usually diminished, the total acidity is found to be very high and the total solids low. The acidity shows an increase above the normal of 35 to 40 or even 100 per cent. The test for indican rarely shows its absence.

The cathartic routinely given serves, of course, to eliminate a large amount of stagnant, putrefying material from the bowels, and, temporarily at least, the patient is made "better." However, if the cause of the trouble is allowed to persist, the previous conditions soon return and the patient grows steadily worse. The stomach gets out of order, the appetite fails and the mouth conditions often become serious. Teeth decay rapidly, not from lack of care, but from the acid saliva that is invariably present. Neurasthenia, mental irritability, the "blues," insomnia, neuritis, neuralgia, dyspepsia and a large number of other diseases are often encountered, and the patient is apt to become sooner or later a nervous wreck. In this condition he goes from one physician's office to another without permanent benefit. At times he feels a little better, and again he is much worse, until at last he falls an easy victim to some serious disease, such as pneumonia, typhoid fever or tuberculosis.

From the foregoing it is evident that it is advisable in all cases to make a urinary analysis. Leube has well said: "I would advise particularly never to omit the examination of the urine in headache, even if it

is of a purely intermittent character. We shall thus avoid subsequent self-reproaches."

The laboratory report will give definite grounds for initial rational treatment and the subsequent urinary examinations will show the results of the treatment. The saliva, too, should be tested with blue litmus paper—a very easy procedure of considerable value which should be carried out much more frequently in the routine of office or bed-side consultations. The administration of salines, suitable hepatic stimulants and antacid remedies for an extended time, to be governed by the results on the urinary and salivary acidity, will in time regulate matters very satisfactorily. Intestinal antiseptics such as B-naphthol, the sulphocarbolates and other similar substances are of great assistance in reducing bowel putrefaction. The proteid rations should be materially reduced, especially the more easily putrefying meats.

In closing it may be well to add a few words. Most authorities deny that acidemia or autointoxication are diseases *per se*, and this is doubtless true. They *are* a serious menace to the average individual in that they lower the general vital resistance, making the patient much more susceptible to all diseases, infectious or not. The danger of these conditions is in direct proportion to their insidious onset. They should always be thought of when patients come complaining of obscure ailments. They are easily detected if the physician gives the proper weight to the laboratory findings and makes it a routine practice, either to examine the secretions for himself, or have it done for him by some competent laboratory expert.

Once found and treated before the conditions have resulted in serious organic

changes, the treatment is not only easy but eminently successful, bringing new laurels to the man who *thinks*.

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THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

BY

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Every patient afflicted with gastric cancer is doomed to succumb to this disease in a short time, unless operated upon. All the efforts of curing internal cancer with drugs, or serum, trypsin, electricity, radium, and innumerable other devices are failures. Nowadays only ignorance and prejudice can explain the attitude which promises cure through medical means.

There is only one hope for permanent cure and that is operation. This hope is well founded, because we know that some patients live many years after operation without any recurrence of the disease. But unfortunately this hope is only occasionally, in fact very seldom, realized if we compare the few permanent results with the innumerable cases which die whether operated upon or not.

Permanent results in 20-30% of the operated cases have been published, which shows what can be done by up-to-date technic and a proper selection of cases, but these results are exceptional, and do not correspond as yet to the actual state of affairs.

Generally the results of operations for gastric cancer are less favorable than the statistics of a few leading surgeons show, and the idea of an operation on gastric cancer still offers to many medical men a

priori a gloomy outlook, because of the innumerable and unpublished operations which not only came too late to help but prematurely ended life, some of them by ill chosen attempts to perform a radical operation.

Undoubtedly this can be bettered if surgeons as well as medical men will change their attitude. The foremost condition of a surgical success is, besides a perfect technic, an early operation, and the prerequisite of an early operation is an early diagnosis. All our efforts must therefore concentrate on this point we medical men have to make the diagnosis and have to call on the surgeon early enough to enable him to completely eradicate the cancer.

On the other hand the surgeon ought not to attempt to perform a radical operation, when it is decidedly too late, or when the immediate danger to life, arising from an extensive operation is out of proportion to the small possibility of a radical cure.

What we should plead for is early diagnosis and early advice from the internist for an operation, and at the same time conservatism in surgery. How far this should go is to a great extent a surgical question, which I shall not discuss.

There does not seem to be a uniform conception of the term "early diagnosis." Some consider the diagnosis early before a tumor is palpable, or before cachexia develops. Others consider it early before any evidence of metastasis develops. These definitions seem rather uncertain and conceived too much from the physician's standpoint. It seems rational to consider a diagnosis early as long as the condition of the patient and the extension of the tumor are such that a radical operation can be performed with reasonable hope for a permanent cure.

The generalization of the cancer shown by metastasis excludes, of course, an early diagnosis but otherwise we should not rely on any single symptom in classifying a diagnosis as early or late. A tumor might be felt in one case on the anterior wall of the stomach and its size and situation might be such, that it can be radically extirpated. Here the diagnosis is early in spite of a palpable tumor. Another case shows diffuse infiltration of the small curvature and of the glands, but no tumor is palpable; here the diagnosis is late in spite of the absence of a palpable tumor. This means we can hope to have made an early diagnosis, in a certain case if metastasis, cachexia, blood in the vomitus, etc., have not appeared, but we are not sure of it until the abdomen is opened.

There are no medical means at present at our command that would guarantee a radical operability. We can not rely on the duration either. Some cancers are so malignant that after two months a radical operation is impossible, while another growth might remain localized six months after the first symptoms appear.

It is therefore obvious that only a consideration of all symptoms and all the findings can assure us with a reasonable degree of certainty that the diagnosis has been made early and can be followed by a radical extirpation.

Accepting the conditions as they at present exist, we can state only this: There are no definite rules which we could accept as a guarantee for an early diagnosis and therefore the diagnosis should be made as early and as quickly as possible after the suspicion of malignancy has been aroused.

Now let us see how matters stand regarding the early diagnosis in practice.

Of course the fully developed case with tumor, cachexia, vomitus of coffee-ground particles, dilatation of the stomach, will not be mistaken. The experienced practitioner will also recognize, as a rule, the real nature of the disease, if only one of those mentioned symptoms to a marked degree, as persistent vomiting, or progressive cachexia, anemia, or the tumor exist. But before these symptoms appear, in cases without tumor ectasy, persistent vomiting, or cachexia, the diagnosis is as a rule delayed, because the cancer is not suspected or nothing is done to strengthen or to disperse the suspicion. Surgeons, and medical men engaged in this special line of medicine, agree perfectly on this point, the diagnosis is in the majority of cases not established, before the terminal symptoms appear. Malignancy is frequently not even suspected, and if a suspicion of cancer is entertained the famous expectative treatment is carried out. With a stomachic and a laxative the time is wasted until the decisive symptoms appear, and the patient is beyond hope of recovery.

But at the same time it must also be said, to the credit of the general practitioner, that his observations, especially in his capacity of house physician, sometimes lead him to assume malignancy in the very early stage of the disease, because knowing well the patient and his habits, he notices the indefinite beginning symptoms, he notices also, their persistency and unable to trace the cause of the dyspepsia he is more anxious to exclude cancer than to wait simply for a further development of the situation.

If we take clinical pictures of fully developed gastric cancer and follow up the succession of the important symptoms in the history of these cases, we reach a

period of time in the development of the cancer in which there have been significant symptoms which by themselves or in conjunction with others make the diagnosis possible, or at least lead to a well founded suspicion of malignant stomach disease at a time when still something can be done for the patient. To call the attention of the general practitioner to these early symptoms is the purpose of my remarks. I do not wish however, to discuss any of the theoretical problems or those diagnostic methods, the practical value of which is not assured as yet.

The cancer of the cardia I shall not take into consideration because it belongs in its symptomatology to the cancer of the esophagus and is, as a rule, in its early beginning already characterized by difficulty in swallowing.

Among the cancers of the stomach a considerable number develop on the base of an old healed ulcer. These cancers are mostly pyloric tumors and behave like primary pyloric cancers. On the other hand unhealed chronic ulcers degenerate frequently into a malignant growth. These cancers—*ulcera carcinomatosa*—show very important and quite different features from primary carcinoma and require separate consideration. I shall not include these cancers in my remarks. They are characterized *a priori* by the history of a chronic gastric ulcer.

The earliest symptoms of the beginning cancer are usually the progressive loss of appetite, strength, flesh, and color; mental depression, heaviness after meals, belching, foul eructations, aversion for meat, and sometimes continuous itching. Whenever these symptoms appear cancer should be suspected. The progressive feature in the

development of these symptoms ought to be considered most seriously.

Objectively we will find as the earliest symptoms in pyloric cancer: microscopic food retention, active peristalsis, occult blood in the stool, *sarcinae* and blood in the stomach, tumor traceable with X-ray. In extrapyloric cancers we will find pus, blood, *ameba*, *Oppler Boas bacilli*, lactic acid in the debris of the fasting stomach—positive Salomon-test and occult blood.

The age of the patient is of course a very important factor. Most cancers occur between 40-70. Therefore every dyspeptic at this age ought to be examined with suspicion of malignancy. But statistics show that younger people are more and more becoming afflicted with this disease. This should prompt us not to lay too much stress on the youth of the patient as a point against cancer.

Practically there is only one pathognomonic symptom and that is the demonstration of cancer-cells in the fasting stomach or in the vomitus. No other symptom by itself is pathognomonic for gastric cancer.

No doubt this will change and perhaps in the near future. All over the world the cancer problem has been made the subject of extensive research work and it is a reasonable hope that we may soon be in possession of a reliable method in tracing specific substances in cancerous individuals. In the meantime before any diagnostic method of specific value has been reached, we have to avail ourselves of all known methods. We do not wait for pathognomonic symptoms in other diseases and we do not have to wait for it in the diagnosis of gastric cancers. The combination of symptoms is the basis of the diagnosis.

This of course makes the early diagnosis of gastric cancer somewhat dependent upon the skill and the experience of the medical attendant.

While in some cases the appearance of the patient, the onset of the disease, the history of gradual loss of energy, flesh, color, and appetite, disgust for meat, nausea after meals, and other symptoms, perhaps with occasional vomiting of food taken the day before, and visible active peristalsis, these symptoms will assure the diagnosis without laboratory methods, in most cases a thorough gastric examination is indispensable—we have to complete the patient's history by our investigation of the secretion and motility of the stomach. A disturbance of one or both is a very strong point for the diagnosis of malignancy, especially if we can demonstrate it repeatedly within a short time and if we find a gradual impairment of the motility, and a gradual disappearance of hydrochloric acid with the ferments.

The differential diagnosis between cancer of the stomach and other diseases, chiefly chronic gastritis achylia, benign stenosis of the pylorus, cirrhosis of the liver, pernicious anemia and nervous dyspepsia requires separate analysis, which I have to omit in consideration of our limited time.

If, in a certain case, the suspicion of malignancy appears to gain ground we pursue the following course:

The history, heredity of the case is carefully studied, repeated efforts are made to discover by palpation any abnormality. After 3 days, during which meat-free diet has been given, the stool of the patient is examined for occult blood. The patient then receives a retention-meal and next morning the tube is introduced into the

fasting stomach. Its contents are withdrawn and the stomach is washed with 2-3 ounces of normal saline solution. Stomach contents and lavage water are examined macroscopically, chemically and microscopically also, after being centrifugalized. One-half hour after the lavage the patient takes a test breakfast, after which the abdomen is observed for a sufficient time for active peristalsis. One hour after test-breakfast the stomach contents are withdrawn and properly examined for hydrochloric acid, ferments, mucus, etc. Of course the routine examination of other organs, of blood and urine are not omitted. If necessary the examination with X-rays and the Salomon-test is carried out.

In typical cases the diagnosis, as a rule, can be made in a few days, in others it takes 1 to 2 weeks until the diagnosis is beyond doubt. In the very early stage of the cancer and in typical cases sometimes it may be necessary to observe the patient longer and to repeat some examinations before reaching the diagnosis. During our observation we watch with special attention whether the HCl. acid, the ferments of the stomach are decreasing, whether the motility becomes impaired and whether the patient continues to lose flesh in spite of proper diet.

The positive value of such systematic and up-to-date gastric examination has been demonstrated by early diagnosis and successful radical operation.

This positive value is generally acknowledged but we ought not to overlook the great advantage which the systematic gastric examination offers if the result is a negative one. I wish to emphasize this particularly.

If we find during a period of four weeks that secretion and motility are normal, that

the hydrochloric acid is not diminishing, if repeated examinations for pus or blood in the stomach remain negative, we will hardly make a mistake in excluding a malignant disease of the stomach, even if the subjective symptoms persist. This is decidedly a gain and must be of special value to the surgeon who wishes to avoid performing unnecessary exploratory laparotomies.

The means of medical diagnosis however are limited. There are cases, in which even an observation during 4 weeks will not enable the internist to make a positive diagnosis or to exclude cancer. It simply remains a well founded suspicion of malignancy. These cases are rare, but they occur, and the only rational course to pursue is to have the surgeon make exploratory incision. To wait until the development of the disease finally establishes the diagnosis seems conservative but it is in fact reckless, it brings the patient beyond hope for cure. Now if the probatory operation was absolutely safe it could be recommended as a routine method in gastric diagnosis.

This not being the case the medical man cannot advise exploratory incision as a routine procedure and the public will certainly never accept it as such.

The reasoning, that, because a complete gastrological examination might not lead very soon to a decisive conclusion, it is better to make the surgical exploration at once in order not to lose the probable advantage of an early operation seems doubtful logic. Carried to its extreme it means, that every dyspeptic over 40 should be operated upon in order to decide whether cancer is at the base of the dyspepsia. In fact this has been seriously proposed from the surgical side.

Fortunately this is not the opinion of the conservative and experienced surgeon, because it would discredit probatory incisions. I hope to have the consent of the aggressive internist as well as of the conservative surgeon in stating this.

Let us advise probatory incision as soon as there is well founded suspicion of malignancy, but* don't let us accept a suspicion as well founded, as long as the attempt has not been made to exclude cancer by proper observation and examination, which can be done at the longest in about 4 weeks in the great majority of cases.

In a circle of practitioners it would be most interesting and instructive, to discuss the question, what the actual reasons are, that the beginning gastric cancer is so seldom diagnosed, and referred in time to the surgeon: The fatalistic practitioner who does not care to hurry with the diagnosis, because he does not believe in any operative interference in carcinoma ventriculi; the man of every day routine, who considers every dyspepsia as nervous or as a chronic catarrh, unless the diagnosis of cancer is already written on the face of the patient; the practitioner whose time and opportunities for laboratory examinations are too limited. Each could say a good deal and contribute valuable points how conditions could be bettered. Considering the short time at my disposal, I shall confine myself to these remarks.

As long as gastric cancer has a latent stage without pain or any other alarming subjective symptom some of the patients will always be too late for an early diagnosis, because they do not seek medical advice in time. This can never be changed. In all other cases the diagnosis could be made by medical means, and if necessary, by probatory laparotomy, if the general

practitioner would only suspect more frequently malignancy and would carry out the proper course of examination in order to abolish the suspicion or to recommend laparotomy in time.

In concluding I wish to submit to your consideration the following points:

Malignancy of stomach trouble is not suspected often enough, particularly by the general practitioner. In cases with indefinite symptoms of dyspepsia apparently without reason, and with progressive tendencies we should not be too ready with the diagnosis of "chronic gastritis" or "nervous dyspepsia" but should bear in mind the possibility of an incipient cancer.

We suspect under these circumstances malignancy in patients between 40 and 70, but do not forget that it occurs not so seldom before 30. If we suspect cancer we should carry out those examinations which are of established value, some of them repeatedly in order to reach an early diagnosis; special attention given to active peristalsis, to the microscopical findings on fasting stomach, to the gradual disappearance of hydrochloric acid, and appearance of lactic acid, also the Salomon-test. We should never omit to search for occult blood in the stool after meat-free diet. If within 4 weeks the cancer cannot be excluded and symptoms continue on their progressive line, probatory laparotomy should be urged. An early diagnosis means radical operability.

Discussion.

Dr. Max Einhorn said: Doctor Kast's paper is very thorough and instructive. I agree with the reader of the paper that it is very difficult to say when a diagnosis of cancer of the stomach should be called "early." It appears that we should term it "early," when there are not as yet too many of the late symptoms and complications present. It does not seem that cancer of the stomach could be recognized in its infancy or at its very beginning, for the

growth causes symptoms when its size interferes with the functions of the stomach, but not before. It will, therefore, be recognized comparatively early, if situated at the pyloric or cardiac orifices. The pyloric cancer, for this reason, gives the best outlook for early recognition and also removal. Cancer situated at the lesser curvature, even if diagnosed early, does not offer the same favorable chances for resection. Cancer of the oesophagus and cardia is still less favorable for radical operations. Here palliative operations (gastric fistula) are performed. With regard to diagnosis, occult blood is quite important. The examination of the gastric contents for traces of blood, provided no meat has been ingested for 24 hours, is fully sufficient, and gives at least as good results as the examination of the stool for this purpose. The advantages of using the gastric contents for the discovery of blood, consists in avoiding the keeping of patient on a meat-free diet for two to three days, and the waiting connected with it.

Dr. J. W. Weinstein said: The paper and the discussion have brought out one salient point, namely, that there is not one single individual subjective or objective sign that is pathognomonic of cancer of the stomach. The presence of a tumor, even if we know that it belongs to the stomach, does not mean necessarily that it is a cancer, for a large-sized ulcer gives rise to a tumor. In the same way, vomiting of coffee-grounds—an important sign in diagnosis of cancer—is not diagnostic of it, for we get coffee-grounds in any condition where there is a hemorrhage in the stomach, and where the blood stays long enough in the stomach so that the blood pigments are converted into hematin, such as ulcer of the stomach, in cirrhosis of the liver, in obstructions of the portal circulation, in oesophageal varices, heart cases, and so forth. The examination of the stomach contents does not fare any better. Absence of free HCl and presence of lactic acid are certainly important features in gastric cancer, but, as symptoms by themselves, they do not amount to very much, for absence of HCl is met with in achylia gastrica, in advanced cases of chronic gastritis and in pernicious anaemia. Lactic acid is also met with in chronic gastritis and other conditions.

But while these symptoms individually are not characteristic of cancer, when taken collectively, they present a distinct clinical picture which is characteristic of the disease. I will try to point out these symptoms:

A patient presents himself with a stomach history. He has been sick for from two to three months. He vomits, he belches gas, has lost his appetite, has lost some flesh and strength, and so forth, such as a good many other patients complain of. If we will look into the history more carefully, we will elicit the following points: The patient is about 40 or over. *The acute onset of the disease:* While in most stomach diseases the onset is a chronic one, in cancer it is acute. Even in ulcer the patient gives a previous history of symptoms of hyperacidity. You ask a patient

with stomach trouble, how long he has been suffering, and he will tell you, let us say, two months, six months, or one year. Ask him whether he was perfectly well before, and he will say that he did not feel well before either. The patient has great difficulty in telling exactly how long he has been sick. In cancer, however, this is different. The patient knows even the date when he was taken sick. Ask him whether he was perfectly well before, and he will be most emphatic about it, saying that he was. In fact, he seems to be surprised that he should have been taken sick.

Loss of appetite.—This may come on with the onset of the disease, or may develop a few weeks later. *Loss of strength and flesh. Aversion to meat. He may vomit or not, possible belching and constipation.*

We put the patient next on the examining table. We may find a tumor, we may find some resistance only, or we may find nothing at all. We then give the patient a test-meal, and we find no free HCl and the presence of lactic acid—99 chances to 100 the patient has got a cancer in the stomach. Should we find large numbers of Boas-Oppler bacilli, the diagnosis is made certain.

Should the cancer be located at the pylorus, a prominent feature in the history will be vomiting; vomiting of large quantities of food, vomiting of food stuffs eaten on the previous day, vomiting in the middle of the night. On inspection we may find the stomach to be dilated, —peristaltic movements of the stomach in an endeavor to propel the contents through the pylorus. An Ewald test-breakfast is, in such cases, very often of little value, for we often find the acidity normal and even increased and no lactic acid. The reason of this is that the stagnating contents act as an irritant and cause the glands to secrete continuously, and because of the carcinoma being at the pyloric valve, the secreting apparatus is not damaged, since there is no oxyntic or acid producing cells in the pyloric region. On inflating the stomach we find it to be dilated. We give next a good-sized meal and examine seven hours, then 12 hours later, and we will find putrid, foul, decomposed food. This is the stagnation test. The diagnosis of pyloric obstruction is thus a certainty. But how are we to determine whether the obstruction is malignant or benign? For a cicatrized ulcer at the pylorus or a hypertrophied pylorus gives the same clinical picture, even the cachexia is the same. This is often very hard to determine. The microscope here is very often of great help. The presence of Boas-Oppler bacilli and the absence of sarcinae means a cancer. On the other hand, the presence of sarcinae and absence of Boas-Oppler bacilli speaks for a benign condition, for sarcinae are present in benign ectasies. They are never seen in cancer. Oppler has injected pure cultures of sarcinae in cancer cases, and found them all to disappear within 24 hours.

Dr. A. Bassler said: I have always believed it quite unfortunate that special text-books on

the stomach and intestinal disease, and most of the papers and articles that I have listened to, have presented the subject of cancer of the stomach in a mild form of the characteristic picture of late cancer. In considering the details of symptoms,—because it is upon symptoms that we must make our diagnoses,—I would like to say, that in the matter of heredity, there is nothing of value in it. Family cancers are quite as common as family tuberculosis, and while I would accept predisposition to tuberculosis in family history, I will not do so in cancer. When you take this matter into deep consideration, you will find it is untenable. In the way of subjective symptoms, I believe that in so far as early cancer of the stomach is concerned, there is not a subjective symptom or group of them that is characteristic of the early disease. We find, in the majority of cases, some time before the tumor is palpable in the epigastrium, that there are no symptoms, or symptoms are present which are insignificant as compared to the benign affections. In the benign affections we find more symptoms, or the same symptoms in a more intense form, and one is very liable to overlook the case as being a malignant one, rather than to be suspicious of it. I think there are practitioners here to-night who have seen cases of cancer of the stomach develop in their practice,—patients in whom they did not suspect that cancer was present until, in a disagreeable moment, after using rhubarb of soda, tonics and acids, and so on, a mass was felt in the epigastrium, and then the usual thing is that you send the patient to someone who does detailed work in gastric affections, and with such, a look at the patient, a feel of the epigastrium, and the test-meal is only necessary in a confirmative way. The X-ray is of no value. I have a beautiful X-ray at home of a simple neurotic hypermotility which produced a plate showing a series of radiations from the lesser curvature which looked much like a picture that might be produced in marked carcinoma infiltration of the body of the stomach. If your stomach is in motion in peristalsis, there is constant change in the outline, and that is liable to give you a more or less shadowy outline and radiations from the curvatures. There are two subjective symptoms that are of some value, namely, the sensation of distress in the epigastrium after meals, and anorexia, but these two symptoms are present in all of the other gastric affections as well.

The only way possible to make a diagnosis of early cancer of the stomach is by a series of test-meals. Doctor Kaat has the right idea,—to attempt to find blood in test-meals, which I think is possible in twenty per cent. of the early cases. When I speak of "early" cases, I mean before the tumor is palpable, and blood must not only be sought in the stomach contents, but in the feces as well. In the latter case, if it is very trivial in amount, it may be digested and absorbed before it reaches the rectum. The presence of pus, found in empty stomachs, after instillations of a normal saline

solution, is of much value, for ulceration, in my opinion, occurs early in cancer cases. The subject of finding carcinoma cells is, to me, very interesting. I must have seen them hundreds of times; but I could never feel that a cell that I looked at was characteristically or distinctively a carcinoma one. Many cells are found normally, in test-meals, the squamous, for instance, and in these the protoplasmic body is digested away down to the more resisting nuclear membrane. These free nuclei look like cancer cells. Then there are certain vegetable substances, like soft forms of green vegetables that have very small cells. All of these look so much alike that if tissue stroma is not present, I could never tell whether they were carcinomatous or not.

There is one thing more that has not been mentioned here, and that is the subject of micro-organisms. Most all gastric cancers in the early stages, because of present ulcerations, show increased amounts of streptococci, staphylococci, or a streptobacillus in the test-meals. When blood, pus, and a constantly present predominant micro-organism is found with a steadily waning hydrochloric acid content, be on your guard lest in a few weeks a tumor develops in the epigastrium.

Then the matter of keeping accurate record of the weight of the patient in these early stages, is, in my opinion, very important. The use of the scales, each morning, before breakfast and after the rectum and bladder are emptied, showing the loss of a pound or two in a week, and steadily going downward, with the findings in the series of test-meal examinations, are of great significance in making an early diagnosis, and singling out the cases for exploratory incision, which can be done quite harmlessly, under cocaine. Success in surgery, in the curative way, comes only when diagnoses are made before the tumor is palpable, before extra-gastric extension has taken place, and before secondary stomach change has occurred.

Dr. G. A. Friedman said: Absolute diagnosis in the early stages of carcinoma of the stomach, in the absence of a palpable tumor, is impossible in most cases, because no pathognomonic, subjective symptoms are present in the beginning of the disease. At most, a relative diagnosis may be made in such cases. If, however, we obtain laboratory data in regard to any patient in the carcinomatous stage, and these data include, on repeated examinations, the absence of free hydrochloric acid, the presence of lactic acid and of bacilli, we are justified in making the diagnosis of carcinoma. A word of caution is required in regard to the estimation of lactic acid. I have found that Uffelmann's test for this acid is not of great value, because it does not show small quantities of the acid which may be supposed to be present in the early stages of carcinoma; Boas' test, on the other hand, depends upon the estimation of aldehyde, into which lactic acid is changed, and this, as is well known, may be demonstrated either by the fruity odor or by the formation of crystals of iodoform. Although in general, I share the opinions expressed by Dr. Kast, yet

I must say that some symptoms and signs which he includes among the early ones, I have either very rarely seen or have observed only late in the disease. Thus, he has mentioned coffee-ground vomit as an early sign. This sign appears very exceptionally because only the encephaloid type of carcinoma is apt to bleed early in the disease. This state of affairs explains the well-known infrequency of a positive test for occult blood early in the development of gastric cancer. I fear that absolute diagnosis of gastric carcinoma, in its early stages, will become possible for us only when instruments will be invented that will enable us to see the first stages of the proliferation of gastric epithelium that leads finally to the formation of a cancer. However, it may happen that a palpable pyloric tumor may exist, and yet no glandular involvement will be found at the time of the operation, which will enable a radical operation to be performed.

Dr. H. M. Stark said that the main feature in connection with the consideration of malignant disease of the stomach, was to establish a diagnosis as soon as possible, with a view to transferring the case to a surgeon who, alone, was in a position to cure the disease, at least for a time, if discovered in its incipency. That in this respect, malignant disease of the stomach conformed with the rule adopted in connection with diseases of the pancreas, appendix and gall-bladder; namely, identify the disease early and operate. The clinical picture and history of the case were to him of as much importance as the chemical analysis of the stomach contents and the examination of the mechanical functions of the stomach. The history of the case also was of more importance to him than the mere absence of hydrochloric acid and the presence of lactic acid. In most cases of carcinoma of the stomach, loss of weight and strength were symptoms which were found long before the analysis of the stomach contents showed signs of the disease. When the disease was well advanced, elaborate chemical analyses were really superfluous, for in this stage any first-year medical student could make the diagnosis.

Dr. Stark said that his object in discussing the paper was to point to the importance of an exploratory gastrostomy in all subjects over forty years of age who presented chronic gastric symptoms, not amenable to medical treatment, where the history points to an acute onset of the disease, and accompanied by rapid loss of strength and flesh. In a majority of cases of chronic gastric affections, not amenable to medical treatment, surgical procedures are indicated, in patients over forty, irrespective of laboratory findings. These latter shade into each other by such fine stages, that the differential diagnoses between stomach diseases cannot, in many cases, be made by an interpretation of the laboratory findings.

Dr. Louis Fischer said he would like to ask Dr. Kast whether, in his experience, he had seen very many cases of gastric cancer in children, —that about two years ago he saw a case of cancer of the stomach in a girl, eleven years of

age, and the case was operated on; the diagnosis was confirmed by the pathological examination and the girl died shortly afterwards. She was operated on by two different surgeons. The second surgeon that operated on the case said, in commenting on the first surgeon, that the first man did not cut out enough. The point he wanted to make was that this was the third case that we have seen of an authentic cancer of the stomach in so young a patient. The one of two years ago was not diagnosed before the operation. The cachexia, emaciation, vomiting and chemical examination of the gastric contents did not give a perfect diagnosis. The girl was operated on for a cancer of the stomach, and seemed to improve for a month or so,—the hemorrhage was especially controlled.

Dr. Willy Meyer said: I regret exceedingly that professional duties prevented me from getting here in time to hear Dr. Kast's paper, the subject of which has been of great interest to me for many years. The early diagnosis of cancer of the stomach represents the crux under which patients and surgeons alike have suffered since the surgery of the stomach began, for, it must be admitted, we are up to the present time unable to make such early diagnosis.

The principal cause is, that gastric carcinoma frequently develops without pronounced symptoms. This is true especially of the more common variety, which starts at the lesser curvature, then descending anteriorly and posteriorly over the wall of the stomach in the shape of a saddle; but it also holds good in regard to the type that has its origin in the posterior wall from which it extends downward until it gradually involves the pancreas.

Second in point of frequency is the cancerous growth that starts at the pylorus, where it often hides itself below the overlapping liver. By the time that we are able to distinctly feel a tumor, it is usually "too late" as far as a radical cure is concerned. How, then, shall we ever reach the goal of bringing these patients to operation at an early date?

Not long ago I had the pleasure of discussing this subject with Prof. v. Leube, Professor of Internal Medicine at the University of Wurzburg, who had come to the recent International Congress on Tuberculosis, at Washington, as representative of the German Empire, besides Robert Koch. He told me that he now made it a rule to send to the surgeon for exploratory laparotomy all cases of stomach trouble that did not yield to the ordinary methods of treatment in vogue for such affections within about six weeks.

This, certainly, seems to me the standpoint that we shall have to reach regarding these cases. Of course, it is mainly the general practitioner upon whom we shall have to rely. It is he who nearly always sees these patients first. It is he who now often waits until it is too late before sending these cases to a stomach specialist or surgeon. It is he, therefore, who should above all, follow the rule above stated, which will, in the end, benefit himself as much as the patient. To repeat, we should observe

the following rule in these cases: If the patient does not respond to the ordinary treatment employed for chronic catarrh of the stomach, and if, in spite of proper feeding, his weight gradually decreases, exploratory laparotomy is to be resorted to.

With our present technic we certainly can conscientiously state that an exploratory operation is devoid of danger. Of a hundred such cases, 100 get well, provided no unforeseen complication follows the general anesthesia. How then to proceed in the given case, the surgeon must decide. While carcinoma in the young is usually followed by death within six to seven months, with or without operation, in older patients this disease is generally more benign in character and of slower growth, and if here the tumor is removed, the prospects for relief for a fairly long period are good. Even if these patients finally succumb to the disease, they rarely develop a local recurrence, but die of metastases, enjoying good digestion to the very last.

As regards the method of operation in case of pyloric obstruction, surely, gastrectomy is far preferable to the symptomatic operation of gastro-enterostomy. In the latter the tumor remains *in situ*, and as experience has shown, that the duration of life in these cases is shorter than after resection of the stomach, even if a permanent cure seems impossible at the time of operation. And in view of the statistics of competent men collected from the literature of the world, showing that the mortality has decreased from year to year, surgeons need not hesitate about widening the sphere of gastrectomy. Whereas only five to eight years ago we still had a mortality of about 50%, it now has dropped to 10 to 20%. We may hope, therefore, by adhering to the principles above expressed, to markedly improve the lot also of the class of sufferers here under consideration.

Dr. Kast said, in closing the discussion: While I realize the diagnostic difficulties which sometimes make it impossible to reach an early diagnosis by medical means, it seems to me that the rather disheartening standpoint which found its expression in Dr. Einhorn's remarks, and in a recent article of Boas, does not correspond to the majority of cases. The more experience those gather who see more or less selected cases of gastric diseases, the more pessimistic they become, but those cases are just the ones which represent the unusual combination of symptoms. They are only few in number, as compared with those which can be diagnosed in time, if the proper systematic examinations are carried out.

Dr. Weinstein's clinical picture of the gastric cancer is the classical one indeed, and he is right in assuming that there is a probability that 99 per cent. of the malignant growths we deal with, present these conditions. But the clinical picture is not always as clear cut, and, therefore, we cannot entirely rely on the classical features. If we do not avail ourselves of all possible diagnostic methods, we fall back to the conservative and fatalistic standpoint which Dr. Isaacs seemed to favor. Because

the reports of certain laboratory examinations are not identical in all cases of cancer, we ought not to question the value of the tests. We cannot expect that the diagnosis of carcinoma will be returned after we send a stomach contents to a laboratory. The laboratory test is only one part, and must be used *cum grano* *salis* at the bedside. Dr. Isaacs' remark, that we cannot obtain an early diagnosis of gastric cancer, is not in accord with the actual facts. Otherwise, we could not have any permanent surgical results. Contrary, there are more and more early diagnoses made, and this explains the increase of permanent cures through surgery.

I agree with Dr. Bassler perfectly, that the X-ray pictures are of very little value in the diagnosis of gastric cancer. I have not spoken of X-ray pictures, but of fluoroscopic examinations. The interesting work done in this line by Dr. Holzknecht, of Vienna, and others, has without doubt shown,—and this corresponds with my own experience,—that we frequently gain valuable information through a fluoroscopic examination, at a comparatively early stage of the cancer.

To Dr. Fischer's question, I have to answer that my work does not bring me in contact with children. But, if I am not mistaken, the recent literature upon this subject contains more and more reports of cases of very young people afflicted with gastric cancer.

ADDRESS.

BY

WOLFF FREUDENTHAL, M. D.,

New York City.

As President of the Eastern Medical Society it is my privilege and honor to welcome you all who have come to join in the celebration of our annual banquet. It is the sincere wish of the officers of the society that every one present will greatly enjoy this evening spent with us.

It is my pleasant duty as president to say a few words on "Our Society." Several times I have been asked whether there is really a necessity for a society like ours. Look at this assemblage and remember that we have 578 members in good standing and at every meeting from 10 to 12

¹Delivered at the annual banquet of the Eastern Medical Society of the City of New York, held at Hotel Astor, Nov. 26, 1908.

new names are proposed as new associates, and the question of our necessity has been answered by our growth and our accomplishments. Whether the Academy of Medicine does not fulfill the purpose for which we stand is answered by the necessity felt in the Bronx by our Bronx colleagues, in Harlem by the Harlem Medical Society, in Brooklyn, etc. The Academy of Medicine in 43rd Street is most centrally located offering exceptional resources in the grand library and special scientific work in the sections. To uphold and support it in my opinion ought to be the aim of every practitioner. I became a member as soon as the legal requirements were fulfilled and I feel great pride in holding an office there. Yet there are many busy practitioners living far below 43rd Street not lacking in medical education nor medical ethics nor higher ideals who require a society holding scientific meetings and fellow intercourse, in their midst—for what they do lack is leisure and time. Therefore this association was started and from the time of its organization it flourished well until it came to that critical period which must occur in the life of every society and of every drama: the conflict. The conflict came with all its ugly accompaniments, we had our "Sturm-und Drangperiode." That has passed and like most storms it carried with it clouds and darkness and the sun now streams down upon us flooding us with light and prosperity.

Indeed the success which has attended all the meetings this last year was phenomenal. At almost every meeting there was "standing room only," due largely to the enthusiastic support of the

majority of the members. I want to express my thanks to them. The scientific results were as a whole such that they attracted the attention of a wide circle of physicians, the best men in our profession responding gladly to our invitation to read papers or take part in a discussion.

Arrangements have been made with the editors of AMERICAN MEDICINE to have our monthly preceedings published in full. Further plans for the scientific work will be discussed at the first regular meeting in 1909.

The serious problem that has confronted almost all medical bodies is of special importance to many of our members who reside in the downtown districts of our city. The alarming and growing abuse of medical charity has been discussed thoroughly at the last meeting of our Executive Committee. If every insignificant society tries to solve this problem in its own way there will be confiction and no progress, but if they all will join us the E. Med. So. will gladly give its strength and support to the cause. In fact our committee appointed *ad hoc* has already begun its work. To the laity here I say: Send all the worthy poor to our free clinics and free hospitals. That is their purpose and the attending physicians take just pride in large numbers attended and treated. But do not pauperize the people and rob them of their character by sending them to get medical aid free when they can pay for it—alas! often better than the struggling young doctor whose time and ability they take. We all know of cases where every comfort and often luxuries are indulged in, cases who own property, etc., to dress shabbily, attend free clinics, thus crowd out deserving patients, ask and accept the best

ability and greatest care gratis—rejoicing at the economy and laughing at the deception! It is highly immoral and we are greatly responsible for it, all through our phlegmatic indifference to give this weighty subject earnest attention and co-operation. Do not pauperize the people and do not pauperize the doctors!

As members of this large and influential organization we must not forget our civic interests and usefulness. Do you know that the greatest physician of the last century, a colleague with whom some of us had the honor of personal acquaintance, took great pride in being alderman of Berlin? If the great Rudolf Virchow could dignify the position and accomplish such good in Berlin that his fellow citizens appreciated his work as alderman more than his immortal book on Cellular Pathology—would it not be a worthy aim to some of our fellows to enter the aldermanic chamber and look after this large city's sanitary conditions and hygienic life? I discourage such ambitions in the inexperienced colleague whose character has not been tested and whose knowledge of medicine is still unripe. But could we find the rare combination of large medical knowledge together with strength and honesty of character, think of the dignity, the resourcefulness and usefulness of such an alderman!

When a student in Germany I remember my amusement in reading H. Heine's division of the population of the University town of Goettingen. He divided them in 4 classes: "Studenten, Philister, Nachtwaechter, Philister und Vieh." It pleased me more what the greatest litterateur of to-day had to say on physicians. I believe it was in the London Spectator, that I read

Rudyard Kipling's speech to the students of the Middlesex Hospital. According to Kipling the world is divided into 2 classes: doctors and patients. The patients look upon the doctors as the non-combatants look upon the soldier who fights their battle. As life is one of the most important things in the world it follows that those who control this fight must be among the most important people in the world. Those who scoff at doctors when they feel well are the first to eat their words in time of illness and the power of the physician in every field of life is immense and growing steadily. This mighty truth holds good for America as well, although things have changed somewhat. At the time when the medical school of Vienna, I am told by one of my neighbors, was at its height the ideal patient was he who was satisfied with being auscultated and percussed by Skoda and autopsied by Rokitsansky. Things have changed and our patients are not such ideals any more. When wireless telegraphy, aeroplanes and air navigation are established facts, when the telephone and automobile cut distance down to convenience, when the rays of the sunlight are made to suit our wishes, electricity is harnessed into any form, great results are expected of a physician by his patients, greater results are expected of a specialist by his colleagues, and hope which is the back-bone of life becomes a possibility never dreamed of before.

Live and strive, work onward, upward. We have taken life's highest profession for our sphere of usefulness. Let us fulfill it well.

SURGICAL GLEANINGS.

POSTOPERATIVE cases of **fistula-in-ano** showing unhealthy, pale granulations are

improved by the use of small doses of sodium iodide, beginning with gr. 2 *t.i.d.*, and increasing until proper tone is secured. It will be found necessary to use as high as 60 or 70 grains of this drug *t.i.d.* when an unsuspected specific disease is present.—*Brick.*

THE Curette should be used:

1. To explore the interior of the uterus.
2. The remove foreign material.
3. To remove a portion of a new growth for diagnostic purposes.
4. In the treatment of endometritis where there is menorrhagia or metrorrhagia.

It should not be used:

1. As a routine treatment of endometritis.
2. Where there is a chronic cervical endometritis, especially if it is of gonorrheal origin.—*Ralph Waldo.*

THERE is but one cure of **Bunion**: excision. The best operation is a curved incision with base downward over the metatarsophalangeal joint, preserving the bursa, removal of the head of the metatarsal bone with its bunion, turning in of the bursa over the bone to make an articulating surface for the phalanx and closure with catgut drainage. The foot must not be used for three weeks, to secure the best results.—*Am. Jour. of Clin. Med.*

THE following rule should be universally observed: Whenever there is good reason to suspect, or there is known positively to be, a **rupture of the urethra**, a catheter or sound under no circumstances should be introduced into the urethra as a diagnostic or as a therapeutic measure.—*Rexwold Brown.*

In every case of severe contusion of the lower abdomen it is advisable to determine the condition of the bladder by passing a catheter. If nothing can be withdrawn, or only a small amount of blood, there is reason to assume a rupture of the bladder. On the other hand, evacuation of a large amount of bloody urine would point to a rupture of the kidney.

ETIOLOGY AND DIAGNOSIS.

The Diagnosis of Lupus Vulgaris.¹

The diagnosis is ordinarily not difficult to one who has seen a good many of these cases, but occasionally it is not easy to differentiate it from the two diseases which it most resembles, syphilis and epithelioma. In making the diagnosis between these three affections, the age of the patient is frequently significant, lupus being nearly always a disease of early life, while both epithelioma and the late eruption of syphilis which looks like lupus, are more likely to be seen in those past middle life. Lupus is much slower in its progress than either syphilis or epithelioma, the lupus nodules are deeper, of a peculiar translucent appearance on pressure and readily break down; the ulcers of lupus are not so deep or so sharp-edged as those of syphilis. The discharge from lupus ulcers is much less in amount than that from syphilitic ulcers, and has not the offensive odor of the latter. The epitheliomatous ulcer is ordinarily a single lesion, with a hard, firm edge, very different in appearance from the nodular masses of lupus. We must remember, however, that epithelioma may develop on a long-standing patch of lupus. I have seen several instances of this. The finding of the tubercle bacillus and the reaction to tuberculin are positive diagnostic features.

Tests for Hydrochloric Acid in Gastric Contents.²—The most delicate tests hitherto devised for detecting the presence of free hydrochloric acid in the contents of the stomach are that by heating to dryness, with Gunzburg's reagent, consisting of phloroglucin and vanillin dissolved in alcohol, and the use of a weak watery solution of methyl-violet. Of these the former will give a brilliant red in the presence of .05 per cent HCl, while the latter will give a distinct blue coloration with 0.2 per cent HCl. Recently Steensma has found that the substitution of phlorid-

zin for the same amount of phloroglucin renders Gunzburg's test even more delicate than before.

A new reaction proposed by Simon depends upon the ability of nitric acid to turn guaiac resin solution blue. The test solution consists of guaiac resin dissolved in a mixture of spiritus ætheris nitrosi (10 parts) and rectified spirit (40 parts). A quantity of this is poured above 5 c.cm. of filtered stomach contents, so as to form a layer. At the meeting place of the fluids a white ring forms, which, after a few seconds becomes blue if free hydrochloric acid is present, through its combination with the nitrous ether to form nitric acid. The test is a useful one for practical purposes.

To avoid the criticism of acid estimation that the acid may in a given case be secreted so slowly that it is neutralised at once, Schaly conducts the estimation by introducing into the stomach bouillon acidulated with a known amount of HCl and withdrawing samples at intervals. From the increase or decrease he obtains a more correct gauge of the secretive action of the stomach. He finds that the acidity varies greatly in the same person from day to day.

In cases where the use of the stomach-tube is undesirable, it has been recommended by Schwarz to give the patient 4 grammes of bismuth subnitrate in a Sahli's capsule, and by the help of a Roentgen screen to examine four or five hours after the swallowing of the capsule in order to determine whether the bismuth has escaped. The opening of the capsule indicates the presence of a moderate amount of free hydrochloric acid.

Winter Cholera.¹—Breitenbach thus concludes his interesting and practical paper:

1. Winter cholera has no specific bacteriologic pathology and is a synonym for the more common forms of bowel disturbances, choleric form in nature, occurring in cold weather.

2. The use of this term, interchangeably with the nomenclature of other gastroin-

¹Burnside Foster, M. D. St. Paul Med. Jour., Nov., 1908.

²J. D. Comrie, F. R. C. P., Edinburgh Med. Jour., Oct., 1908.

¹O. C. Breitenbach, M. D., Jour. A. M. A., Oct. 31, '08.

testinal diseases, shows the great need of more exact phraseology, based on correct diagnosis.

3. Meteorologic conditions do not prove to be the exciting cause in these epidemics of winter cholera, but only as the factors instrumental in polluting water or milk are present, do these epidemics occur.

4. Winter cholera, as typified by these choleriform manifestations of diarrhea in cold weather, has no exciting cause in the activity of Pfeiffer's bacillus and does not, therefore exemplify gastrointestinal influenza.

5. Influenza, with a symptomatology centering itself in the gastrointestinal tract, was present during epidemics of winter cholera, but these isolated cases occurred during epidemic influenza. Diagnosis in these cases is established by proving the presence of the associated micro-organism.

6. To the end of stimulating a greater enthusiasm in demanding intelligent and adequate sanitary reform, instruction in sanitary science should demand a major consideration in the medical curriculum.

7. Legislation controlling the water-sheds and preventing contamination of public waters is imperative.

DIAGNOSTIC HINTS.

Owing to the great infrequency of primary tuberculosis of the bladder, it is important in every case in which this disease is suspected to look for a tuberculous focus in some other part of the urogenital tract.

Torsion of the testicle is often difficult to diagnose from epididymitis and orchitis. The chief points in favor of the former are its suddenness of development, the early age of most patients, and the absence of any signs of gonorrheal infection of the urethra or prostate.

Although a rigid abdomen is generally characteristic of peritonitis, this applies only to the early period of the disease, since in the later stages or in the severe septic form there is a tendency for the abdomen to again become soft and palpable without pain.—*Int. Jour. of Surgery.*

TREATMENT.

Induction of Labor.¹—When induction of premature labor has been decided upon for contracted pelvis in the manner described in our previous article, certain definite steps in technique are necessary. Of the many ways of inducing labor, that by the bougie is the only one in common use in cases of pelvic contraction. The bougie is of gum elastic and about the size of a No. 10 catheter. It is hollow but has no eye, and the end is closed by an ivory button. It is best sterilized by boiling, and a convenient way is to place it first in a wide glass tube having indiarubber corks at each end. The corks must be taken out and the tube, bougie and corks boiled together. The corks may then be replaced and the bougie can be carried sterile to the patient.

Passing the bougie into the uterus is not an easy operation, and must be performed in such a manner as to introduce no septic material and not to rupture the membranes. Before passing the bougie the vagina must be rendered aseptic by douching with an antiseptic, or better by swabbing out with pledgets of cotton-wool on sterile forceps. Lysol 3j. ad Oj. is perhaps the best antiseptic for this purpose. The bougie should be passed by the sense of sight and not by touch alone.

For this purpose a speculum to draw back the perineum should be made use of, and a vulsellum should be inserted into the anterior lip of the os uteri so as to steady it. The freshly-boiled bougie is soft, and on this account does not always pass readily; its passage may be facilitated by cutting off the ivory-capped end and stiffening it with a catheter stilet. A wide curve may be imparted to the bougie with the stilet in, so that it may the more readily pass round the internal os and up the anterior wall of the uterus. Any obstruction should be a signal for slight withdrawal and passage in another direction. The stilet should be withdrawn when about five inches of the bougie have been introduced. The bougie is then to be pushed on until about an inch sticks out of the cervix. The vagina is then lightly plugged with sterile gauze and the patient left.

¹The Hospital, Oct. 3, 1908, p. 19.

The patient need not be confined to bed, but may be allowed to sit about her room and even get about the house. Labor sometimes does not come on for many hours, and occasionally it is necessary to introduce more than one bougie. The onset of labor pains generally drives out the bougie, which is found curled up in the vagina.

In conducting an induced labor it is very important that the membranes should remain unruptured, for it is only by their aid that the os uteri will be opened up in normal time. If the membranes rupture prematurely the first stage will be unduly prolonged, because in many instances the foetal head does not descend easily enough to dilate the cervix in lieu of the bag of waters. If the first stage is unduly prolonged for this reason the foetus sustains prolonged pressure, and consequently the chances of its survival become smaller. It is recommended in such a case to dilate the cervix artificially with a de Ribes' bag, provided this can be done without introducing sepsis and displacing the presenting part. It must not be forgotten, however, that interference is the thing to avoid in induced labor; the more normally labor proceeds after induction the more likely the child is to survive.

When the foetal head enters the brim spontaneously the second stage should be allowed to proceed as long as possible without interference, consonant with the safety of the mother. Premature infants will not stand much instrumental violence, but are not injured by a little prolongation of a natural second stage.

Further, it must be remembered that the passages are not so easily dilated before the normal end of the pregnancy, because they have not the same degree of physiological relaxation. Hence a longer second stage may be necessary on this account. The guide to the moment for interference is *the mother's pulse*, too often neglected in the conduct of labors, normal or abnormal. While the pulse remains below 100 the case may be left alone as long as there is any indication that the foetus is advancing.

The foetal pulse must sometimes be taken into account; rapid delivery is indicated if the foetal heart beat falls below 100 or rises above 180. But no operation must be un-

dertaken for rapid delivery unless this can be accomplished without danger to the mother. Any operation which risks an injury to the mother is almost certain to mean death to the foetus on account of the pressure necessary to effect delivery. If, however, the foetal head does not enter the brim spontaneously the forceps must be applied above the brim, a procedure very seldom required and hardly likely to be followed by the birth of a living child. Axis traction forceps are of great service in a case of this kind, but care must be used lest too much pressure is put upon the foetal head for too long at a time and the lock of the forceps should be frequently undone on this account. The aim should be to deliver slowly.

In most hands vertex delivery is safer than breech, but it sometimes happens that the child presents by the breech and must then be delivered in this position. The safeguard here is to leave the case alone absolutely until the chest is born, and then to release the arms as quickly as possible and prevent the head from extending.

The foetal head will enter the brim base first fairly easily, but is liable to extend, and this, together with the probable extension of the arms leads to just enough delay to be fatal. If the child dies before delivery of the head, perforation of the after-coming head should be performed, so as to deliver with the least risk of injury to the mother. This is always an easy operation in minor degrees of contraction, and as a rule is best performed through the occipital bone.

Scopolamine in Labor.¹— Krönig believes that scopolamine, given in combination with morphine, surpasses all other anæsthetics in labor, producing the so-called "dawning sleep." A three hundred per cent solution of scopolamine hydrobromide and a one per cent solution of morphine are used. The first injection consists of 4.5 decimilligrammes of scopolamine and 1 centigramme of morphine. It is given when the patients have pains lasting at least thirty seconds, and which recur at regular inter-

¹Kronig, *British Med. Jour.*, Sept. 19, 1908.

vals of four or five minutes. The first effects are generally manifest about half or three quarters of an hour later. The patients become sleepy and slumber between pains, but awake when the pains return. A second injection of from 1.5 to 3 decimilligrammes of scopolamine alone is given an hour after the first. Half an hour later the perceptive capacity of the patient is tested by asking her if she recognizes an object previously shown her half an hour before, or if she remembers how many injections she has had. If she fails to meet these tests, no further injection is needed. As a rule, all injections following the first contain scopolamine only. Patients may thus be kept semiunconscious for twenty-four hours. After a successful "dawning sleep" women awake post partum perfectly happy, and declare they have felt nothing. It frequently happens that they will not believe they have been delivered. Every thing depends on the correct dosing of scopolamine, and the only available standard as to the correctness of the dose is the test of the patient's consciousness. Loud noises, strong lights, etc., are a considerable drawback in achieving good results. The author's conclusions are based on his experience in 1,700 cases. The length of labor is only immaterially increased, and the method is certainly without danger to the mother, and probably without danger to the child. Of the 1,700 women only two died soon after confinement, and neither of the deaths could be in any way attributed to the scopolamine. It can be used even in cases of organic heart disease.

Before incising a pharyngeal abscess through the mouth a small, hard pillow should be placed under the patient's shoulders, so that the head will drop back sufficiently to prevent the pus from flowing downward.

If possible, drainage should be avoided in operating for tuberculous disease of the bones, as the insertion of drains encourages the formation of sinuses. Scrupulous asepsis will generally render the use of drainage unnecessary.—*Int. Jour. of Surgery*.

THERAPEUTIC NOTES.

Trichloroacetic Acid.¹—Fitzgerald believes that we have in this preparation almost a specific for the great majority of diseases of the mouth, throat and cervical lymphatics.

In postoperative treatment of mouth and throat conditions trichloroacetic acid prevents infections and secondary hemorrhage and enables the patient to swallow solid food without the slightest difficulty almost immediately following a painstaking application over comparatively dry raw areas. This is likewise true regarding cauterized surfaces and practically all diseases of mouth and throat and often one treatment will suffice.

Acute pain and swelling of cervical lymphatics disappears speedily (frequently within a few minutes) through applications within the faucial tonsil and about its base on the affected side. The entire tonsil may be covered if necessary and several applications may be made during one treatment. It is well to use the solution sparingly, however, although the only unpleasant symptoms likely to arise will be a slight dryness, preceded by a trivial stinging over the area treated. Preliminary cocaineization, except perhaps in the nostrils, is seldom necessary. A strongly concentrated solution, as is well-known, alone or in conjunction with the actual cautery (inflammatory extensions are thus prevented), is most useful in the treatment of various infections of the nose and nasopharynx.

Dentists will find trichloroacetic acid indispensable in diseases and postoperative treatment of the gums. As a disinfectant and deodorant in dentistry it will be found most efficacious. Trichloroacetic acid will be found equally useful in the treatment of diseases of the mucous membrane and lymphatics elsewhere throughout the body. Chemists tell us it has no anodyne properties, but Fitzgerald's experience proves it to be one of the most remarkable of anodynes.

Fetid Leucorrhœa.—When the vaginal discharge is particularly offensive in odor this may be ordered:

¹ W. H. Fitzgerald, M. D., *Jour. A. M. A.*, Sept. 12, '08.

Potassium chlorate ...	12.0	(drs. 3)
Wine opium	8.0	(drs. 2)
Tar water	300.0	(ozs. 10)
Vinegar, white	300.0	(ozs. 10)
Tincture eucalyptus ..	48.0	(ozs. 1½)
Salicylic acid	20.0	(drs. 5)

Directions: Two or 3 tablespoonfuls to the liter (quart) of hot water; to be used as a douche two or three times a day.—*Am. Jul. Clin. Med.*

Quinine Hydrobromide.¹—Waugh says that Burggraave pronounced this salt an excellent febrifuge, especially when there were indications of irritation of the spinal cord. Latour first studied it, then Baille and Gubler. The hydrobromide is more soluble than the sulphate and contains more quinine, the neutral salt having 75 percent. The action is more rapid than that of other quinine salts, and there is a remarkable sedative effect on the spinal sensory centers. The efficacy and innocuity of this salt are not now questioned.

From a great number of observations Dardenne and Laura deduced the following: The hydrobromide of quinine is the most useful, the most efficacious, the most energetic of febrifuges; it does not cause intoxication unless in the slightest degree; it has a sedative hypnotic action; even in large doses it does not irritate the stomach; given when chills begin it often prevents the paroxysms of ague; given after the chill is established it lessens its force and duration; its action is very rapid; it can be utilized when there is an idiosyncrasy against the salts of quinine or where the latter cease to be effective.

These special properties had already been demonstrated by Gubler, by Soulez, and more recently by Laverde. The latter declared that it lessened the suffering in all morbid processes, and considered it especially indicated when there was needed at the same time an antiperiodic, an anti-phlogistic and a sedative. Its superiority over other salts of quinine lies in its energy and promptness of action and its absolute harmlessness, especially in urgent and pernicious cases where large doses of quinine are requisite.

¹W. F. Waugh, M. D. Chicago Am. Jour. of Clinical Medicine, Nov., 1908.

GENERAL TOPICS.

The Doctor's Bill.—Did you ever notice, asks a Nebraska contemporary, how reluctant some people are about paying the doctor? When stricken with a severe pain in the epigastrium about 2 G. M. they cry out in affright, for they feel the damp of death upon their brows. Nothing to do but telephone Dr. Sewmups to come at once. He has been to Cheney and back since the poolroom closed for the night, but he rubs his aching eyes, puts on his clothes and pulls into the frosty air for another three miles and back. He finds the patient suffering from gastric fermentation from having overloaded his stomach. The disorder is easily remedied, and the man soon gets about his business and forgets all about it.

Thirty days later he gets a bill for \$4, and it makes him angry. He forgets the pain (there's no such thing as pain), the doctor's six-mile ride in the dark of the moon when he ought to have been asleep, and he forgets to pay the bill or grumbles about it as though it were an extortion that ought to be punishable by legal process or otherwise. Moral: If you don't want to pay the doctor don't send for him.—*Med. Standard.*

The Necessity for Medical Treatment.¹—Osborne says that it is time to repudiate the assertion that Nature is a good physician or a good surgeon. Not that he desires to controvert the belief of ancient, medieval and modern medicine, as evidenced by the various Greek, Arabian, Latin, German and English terms, that the human organism is able to combat poisons and infections and to heal lesions. But we have now come to the time when it should be recognized that we not only must not obstruct in the human body the processes of eradication of an infection which natural metabolism has established, but that it is just as futile and just as absurd not to aid in combating an acute or chronic disease with the proper drugs, all physical and hygienic methods having been instituted, as it is to allow pus to burrow and cause serious consequences instead of properly evacuating it. In other words, natural processes are fighting just as much to

¹O. T. Osborne, M. D., Jour. A. M. A., Oct. 31, '08.

establish the condition or disease or infection that is abnormal to the part where it is, as are the natural processes of the human body endeavoring to eradicate these foreigners who have invaded their stronghold. Who for one moment can think that the cancer cell is not attending to its natural function of multiplying and eating into healthy tissue, and who would allow today such a process to go untreated? Who would allow the diphtheria germ and its toxins to have full sway without the use of its opponent, antitoxin? It is just as absurd to declare that pneumonia and typhoid fever need no medication as it would be to declare that diphtheria needs no antitoxin and no antiseptic gargles.

The Nurse and the Rest Cure.¹— The most important factor, next to the wisdom and tact of the physician, is a suitable nurse. Not only must she qualify technically, but intellectually, and in that far higher sphere which is inexactly described as the realm of common sense, since it is one of the rarest of gifts. Her business is to maintain a symmetrical, consistent, daily routine, and keep the patient all the time busy "guessing," supplying just enough conversation, but not too much information or explanation. Patients often remark that the rest treatment was among the busiest periods of their lives. All this keeping busy is essential. The patient is, and should be, passive; in extreme cases absolutely so, all "doings" being performed by others. At first the nurse actually places food in the recipient's mouth. Conversation had best be of the simplest. Part, and not the least part, of the cure is the selection of the topics; the character of their pursuit is the duty of the nurse under hints supplied by the physician. I remember Dr. Mitchell once telling me a most significant incident. The patient was the daughter of a Catholic physician, who stipulated that the nurse should be a devout Romanist. Whereupon I was directed to install a pink-cheeked Presbyterian. Old lines of thought need to be firmly set aside and new points of view presented. Suggestive education is paramount. In this the nurse is the constant, if not the chief, agent.

¹J. Madison Taylor, M. D., Philadelphia Monthly Encyclopedia, June, p. 279.

NOTES ON MODERN PHARMACEUTICAL REMEDIES.

(Continued.)

HEMABOLOIDS.

Description: Hemaboloids is a clear, dark brown liquid of pleasant taste containing iron combined with nucleo-proteins and proteins.

Formula: Each 15 c. c. contains:

Iron	0.06 Gm.
Nuclo-proteins and proteins.....	0.62 Gm.
Ext. Bone Marrow	0.775 Gm.
Nuclein	0.006 Gm.
Menstrum containing Alcohol 17% by volume.	

Action: Hemaboloids is an organic preparation of iron, in readily absorbable and assimilable as well as non-irritating form. It is hematinic and tonic and does not derange the digestion.

Uses: This preparation is recommended in all forms of anemia, inanition and whenever a tonic hematinic is required.

Dose: One tablespoonful in water or milk after meals. Children in proportion.

Special Consideration: Readily absorbable and assimilable form of the contained iron, freedom from irritating action, the composite formula (presenting concentrated food value) and its therapeutic efficiency.

Bibliography: A description of Hemaboloids appears in New and Non-Official Remedies, Jour. A. M. A., Oct., 1908.

Manufacturers: The Palisade Mfg. Co., Yonkers, N. Y.

CELLASIN.

Description: A ferment derived from a special mycelial fungus, preferably *mucor racemosus*. It consists of a brownish white amorphous powder.

Formula: Cellasin is obtained by an extended series of cultivations of the fungus on different media and under varying conditions. The result is a ferment which through adaptation has acquired special amplitude of enzyme action, as well as increased resisting power.

Action: Cellasin possesses unusual proteolytic, glycolytic, amylolytic and fat splitting properties. It acts best in alkaline media, but is not destroyed by acid solutions or by other ferments. Laboratory and clinical experiments seem to reliably indicate that Cellasin promotes

metabolic processes in the animal economy, with increased conversion of nutritive pabula into tissue substances.

Uses: Cellasin has been recommended in diseases characterized by derangement of metabolism, such as diabetes, early tuberculosis, malnutrition, etc.

Dose: 2 to 14 grains 3 or 4 times a day, one-half hour after meals.

Special Consideration: Its range of ferment activity, resistance to usual ferment destroying agencies, even 25% HCl, and its specific therapeutic action.

References: Reports of J. E. Temple, Ph. D., and Prof. E. H. Bartlett, Long Island Coll. Hospital.

Manufacturers: Mead, Johnson & Co., Jersey City, N. J.

BORNYVAL.

Description: A clear, colorless liquid of neutral reaction, with an odor somewhat resembling that of valerian. It is freely soluble in alcohol and ether, but insoluble in water.

Formula: Bornyval is the iso-valerianic acid ester of borneol (Borneo camphor).

Action: This product is sedative, antispasmodic, analgesic, analeptic, and hypnotic in its action. In other words, it may be said to supply the effects of valerian, but in greatly augmented degree. Its use even over long periods does not induce a habit.

Uses: Bornyval has been recommended in hysteria, neurasthenia, hemicrania, migraine, cephalalgia, neuralgia and the various neuroses, especially those in females accompanying menstrual derangements and the climacteric. In functional cardiac disease attended by palpitation or tachycardia its use is often followed by gratifying results. In chorea, and some cases of epilepsy as a means of relieving nervous excitability Bornyval has proven useful. In many of the reflex nervous affections accompanying diabetes and renal diseases, this remedy frequently gives prompt and satisfactory relief. In fact, whenever sedation of the central nervous system is desired Bornyval may be safely employed.

Dosage: Bornyval is administered in the form of capsules of 4 minims each, one to three

of which may be given two to four times daily, with a little milk, coffee or other liquid. They should be administered after meals; if taken on an empty stomach they are apt to produce eructations.

Special Consideration: The special pharmaceutical character, prompt and effective action and freedom from untoward effects. Bornyval does not induce a habit.

Bibliography:

- O. Abraham, Therapie d. Gegenw., Sept., 1907.
 Bianchini, Therap. Rundschau, 1907, No. 15.
 Dammann, Therapie der Gegenwart, June, 1907.
 H. Engels, Therapeutische Monatshefte, May, 1904.
 C. A. Ewald, Folia Therapeutica, Vol. II, No. 2.
 Hey, Wiener Klinische Rundschau, 1907, No. 13.
 L. Hirschlaff, Allgem. Medizin Zentral-Zeitung, 1903, No. 47.
 L. Maramaldi, Allgem. Wiener-Med. Ztg., 1905.
 M. Mendelsohn, Deutsche Aerzte-Zeitung, 1906, No. 4.
 Merzbach, Fortschr. Der Medizin, 1906, No. 1.
 Nigoul, Deutsche Medizin Ztg., 1907, No. 21.
 Peters, Muenchener Medix Wochenschrift, 1906, No. 2.

American Agents: Riedel & Company, 35 W. 32nd St., New York.

DIGALEN.

(Sol. Digitoxin Cloetta.)

Description: Digalen is a solution marketed in small vials and in ampulla.

Formula: It is a glyceric-aqueous solution of digitoxin, of assayed and uniform strength.

Action: Digalen exhibits the characteristic action of digitalis, increasing the force but decreasing the frequency of the heart's action. It raises blood pressure. Digalen is prompt and uniform in its action and is said to be non-cumulative. It does not derange the digestion. Because of its aseptic character and freedom from adventitious material, Digalen can be administered by intra-muscular, subcutaneous or intravenous injection.

Uses: Wherever and whenever digitalis is indicated as a heart stimulant and tonic.

Dose: The average dose of Digalen is 1 Cc. (16 minims) representing 1-222 grains of Amorphous Digitoxin.

Special Consideration: Purity, uniform strength, definite action, freedom from irritative effect and non-cumulation.

References: Dr. F. Schwyzer, New York, Medical News, Nov. 18, 1905; Dr. B. Kohn, Phila. American Medicine, July, 1906; Dr. B. Hahn, Seattle Wash., American Medicine, Dec., 1906; Prof. J. Groedel, Nauheim, supplement to a lecture delivered at the 17th German Congress for Internal Medicine, April, 1907; Dr. Leonard Weber, New York Medical Record, May 4, 1907; Prof. Naunyn, Munchener Med. Wochenschrift, No. 31, 1904; Prof. E. Romberg, Tubinger University, Deutsche Med. Woch. No. 35, 1905.

American Agents: Hoffman La Roche Chemical Works, New York City.

SANTAL COMP. MONAL.

(With Methylene Blue.)

Description: A balsamic mixture dispensed in soft, flexible capsules.

Formula: Each capsule contains:
Methylene Blue C. P. 0.3 centigrams
Pure Santal Oil (95% Santalol) .. 12 centigrams
Pure Gurjun Balsam (Wood Oil), 12 centigrams
Pure Cinnamon Oil ½ drop

Action: Urinary antiseptic, anti-gonorrhoeic, anti-blennorrhagic, and genito-urinary sedative. It promptly controls pain, tenesmus and the inflammatory process. Does not irritate the most sensitive stomach.

Uses: All forms of urethritis, cystitis, gleet, prostatic diseases and wherever a genito-urinary antiseptic and sedative is required.

Dose: Six to ten capsules daily with ample quantities of water.

Special Consideration: Purity and special quality of the ingredients, the special formula, and its therapeutic efficiency.

American Agents: Geo. J. Wallau, Inc., New York.

GUAIACUIN.

Description: Guaiacuin is a yellowish, crystalline powder, freely soluble in water, alcohol and dilute acids. Chemically it is guaiacol bisulphonate of quinine. It is bitter in taste but free from the odor of guaiacol.

Formula: Guaiacuin contains 44.26 per cent of alkaloid quinine, combined with 55.74 per cent guaiacol sulphonic acid; the latter equivalent to 33.38 per cent of pure guaiacol.

Action: Guaiacuin exhibits the well known physiological action of both guaiacol and quinine. It is consequently antifermentative, antiseptic, tonic and reconstructive.

Uses: This remedy has been used extensively in intestinal fermentation, early tuberculosis, obstinate forms of malarial anemia, malnutrition, chronic diseases of the respiratory tract in glandular enlargements, parotitis, follicular tonsillitis, and many other diseases.

Dose: 5 to 10 grains 3 times a day after meals in malarial conditions; in other diseases from 1 to 5 grains, 3 times a day, preferably in form of gelatine-coated pills.

Special Consideration: Its therapeutic action, representing in augmented degree the specific actions of guaiacol and quinine; its palatability and freedom from gastrointestinal irritation.

References: U. S. Dispensatory, 19th edition, p. 1508; Coblenz Newer Remedies, 4th edition, p. 60; Squibbs' Ephemeris; N. Y. Medical Record, July 22, 1899, &c.

Manufacturers: McKesson & Robbins, New York, N. Y.

Army Medical Corps Examinations.—The Surgeon General of the Army announces that the first of the preliminary examinations for the appointment of first lieutenants in the Army Medical Corps for the year 1909 will be held on January 11, 1909, at points to be hereafter designated.

Full information concerning the examination can be procured upon application to the "Surgeon General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

The examination in subjects of general education (mathematics, geography, history, general literature, and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant General on or before Dec. 10, 1908. Early attention is therefore enjoined upon all intending applicants. There are at present fifty-seven vacancies in the Medical Corps of the Army.

SOCIETY PROCEEDINGS.

THE EASTERN MEDICAL SOCIETY OF THE CITY OF NEW YORK.

STATED MEETING FRIDAY, DECEMBER 11,
1908. DR. WOLFF FRUEDENTHAL,
PRESIDENT, IN THE CHAIR.

The regular monthly meeting was held on Friday evening, December 11, 1908, at the Cafe Boulevard. An unusually large number of members were present to enjoy a most excellent and interesting program.

The following cases and specimens were presented:

- (a) 1. Microcephalic idiocy in an infant.
 2. Congenital heart lesion with double murmur in a child six years old.
- By Dr. Z. Sharfin.
- (b) 1. Foreign body removed from bladder.
 2. Report of cases of prostatectomy.

By Dr. Chas. Goodman.

Dr. M. Rabinowitz read the first paper of the evening on "*When Shall We Operate for Intra Abdominal Hemorrhage due to Tubal Pregnancy.*" This was ably discussed by Drs. Brooks H. Wells, Ladinski, Rongy and Sturmdorf. The next paper was on "*Nasal Obstruction in Children,*" by Dr. Otto Glogau. A warm discussion followed, participated in by Drs. Cohn, Kopetzky, Grushlaw, and Hymanson.

Following the scientific session, the result of the annual election was announced to the effect that the officers of the preceding year had been unanimously re-elected. Dr. Magid then spoke of the joint meeting arranged to take place December 15, for discussion of the dispensary evil. An invitation was extended to all present to attend and take part. Eight new members were elected to membership. Adjournment which then took place was followed by an enjoyable collation.

The next issue of *American Medicine* will contain the papers of this meeting, with full discussions.

THE MANHATTAN CLINICAL SOCIETY.

The regular monthly meeting of the Manhattan Clinical Society was held Friday evening, December 18, at Reisenwebers. Dr. H. Edwin Lewis read a paper on "*Some Remarks on Malignant Disease of the Lung, with Report of a Case of Primary Sarcoma,*" which was discussed by Drs. Friedman and Connors. The second paper was read by Dr. Heinrich Stern on "*A Consideration of Latent Malignant Disease of the Stomach.*" This was discussed by Drs. Friedman, Lewis and others. A general discussion then followed on *Expectorants*. At the close of the meeting a banquet was participated in by all present.

BOOKS RECEIVED.

Pain, Its Causation and Diagnostic Significance in Internal Diseases.—By Dr. Rudolph Schmidt, Translated by Karl M. Vogel, M. D., and Hans Zinsser, A. M., M. D. Published by J. B. Lippincott Co., Philadelphia, Pa. Price \$3.00 net.

Hygiene for Nurses.—By Isabel McIsaac. Published by the Macmillan Co., New York. Price \$1.25 net.

Health and Beauty.—By John V. Shoemaker, LL. D., M. D. Published by F. A. Davis Co., Philadelphia. Price \$3.00 net.

Diagnosis by the Urine.—By Allard Memminger, M. D. Third Edition, Enlarged and Revised with 27 illustrations. Published by P. Blakiston's Son & Co., Philadelphia. Price \$1.00 net.

Handbook of Surgical Anatomy.—By G. A. Wright, B. A. M. B., and C. H. Preston, M. D. Published by P. Blakiston's Son & Co., Philadelphia, Pa.

Therapeutics, Its Principles and Practice.—By Horatio C. Wood, M. D., LL. D. Thoroughly Revised and Rewritten by Horatio C. Wood, Jr., M. D. Published by J. B. Lippincott Co., Philadelphia.

The Campaign Against Tuberculosis in the United States, including a Directory of Institutions Dealing with Tuberculosis in the United States and Canada. Compiled under the direction of the National Association for the Study and Prevention of Tuberculosis, by Philip P. Jacobs. Published by Charities Publication Committee, New York.

Operative Midwifery.—By J. M. Munro Kerr, M. B., C. M., Glas. With 294 illustrations in the Text. Published by William Wood & Co., 51 Fifth Ave., New York. Price \$6.00 net.

High-Frequency Currents.—By Frederick Finch Strong, M. D. With 183 Illustrations in the Text. Published by Rebman Company, 1123 Broadway, New York. Price \$3.00, Cloth.

Diseases of the Nervous System, For the General Practitioner and Student.—By Alfred Gordon, A. M., M. D. (Paris). With 136 Illustrations. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia. Price \$2.50 net.

Aids to Tropical Medicine.—By Gilbert E. Brooke, M. A. Cantab., L. R. C. P. Edin. D. P. H., F. R. G. S. Published by William Wood & Co., 51 Fifth Ave., New York. Price \$1.00 net.

Spectacles and Eyeglasses, Their Forms, Mounting and Proper Adjustment.—By R. J. Phillips, M. D. Fourth Edition, Revised with 56 Illustrations. Published by P. Blakiston's Son & Co., Philadelphia. Price \$1.00 net.

The Natural History of Cancer, With Special Reference to Its Causation and Prevention.—By W. Roger Williams, Fellow of the Royal Coll. of Surgeons. Published by William Wood & Company, 51 Fifth Ave., New York. Price \$5.00 net.

Text-Book of Nervous Diseases and Psychiatry, For the Use of Students and Practitioners of Medicine.—By Charles L. Dana, A. M., M. D., LL. D. Seventh Edition Illustrated by 261 Engravings and Three Plates in Black and Colors. Published by William Wood & Co., New York. Price \$5.00 net.

Intestinal Auto-Intoxication.—By A. Combe, M. D. Together with an Appendix on the Lactic Ferments with Particular Reference to their Application in Intestinal Therapeutics, by Albert Fournier, formerly Demonstrator at la Sorbonne, Paris. Only Authorized English Adaptation, by William Gaynor States, M. D. With 18 Figures in the Text, four of which are Colored. Published by Rebman Company, 1123 Broadway, New York. Price, Cloth, \$4.00.

Emergency Surgery, For the General Practitioner.—By John W. Sluss, A. M., M. D. With 584 Illustrations, some of which are Printed in Colors. Published by P. Blakiston's Son & Co., Philadelphia. Price \$3.50 net.

General Surgery, A Presentation of the Scientific Principles upon which the Practice of Modern Surgery is Based.—By Ehrich Lexer, M. D. American Edition edited by Arthur Dean Bevan, M. D. An Authorized Translation of the Second German Edition by Dean Lewis, M. D. With 449 Illustrations in the Text, Partly in Color and Two Colored Plates. Published by D. Appleton & Co., New York.

Instinct and Health.—By Woods Hutchinson, A. M., M. D. Published by Dodd, Mead & Company, New York.

Index Catalogue of the Library of the Surgeon-General's Office, United States Army.—Authors and Subjects. Second Series, Vol. XIII. Published in Washington, Government Printing Office.

Annual Report of the Pennsylvania State College, for the Year 1906-1907. Part 1, Departments of Instruction; Part 2, Agricultural Experiment Station. Published in Harrisburg, Harrisburg Pub. Co., State Printer.

Surgical Memoirs and Other Essays.—By James G. Mumford, M. D., Illustrated. Published by Moffat, Yard & Company, New York.

A Manual of Obstetrical Technique, With a Chapter on Abortion, Premature Labor and Curettage.—By Joseph Brown Cooke, M. D. Illustrated, Sixth Edition Enlarged and Fully Revised. Published by J. B. Lippincott Co., Philadelphia.

General Pathology.—By Dr. Ernst Ziegler. Translated from the 11th Revised German Edition. Edited and brought up to date by Aldred Scott Warthin, Ph. D., M. D., with 604 Illustrations in Black and Colors. Published by William Wood & Company, New York. Price \$5.50 net.

First Annual Report of the Commissioner of Health of the Commonwealth of Pennsylvania.—Published in Harrisburg, Harrisburg State Printer.

Fourth Annual Report of the Henry Phipps Institute.—For the Study, Treatment and Prevention of Tuberculosis. Edited by Joseph Walsh, A. M., M. D. Published by the Henry Phipps Ins., Philadelphia.

Thirty-Fifth Annual Report of the Secretary of the State Board of Health of the State of Michigan for the fiscal year ending June 30, 1907. Published by Wynkoop Hallenbeck Crawford Co., State Printers.

Index Medical Review, Vols. 1 to 10, 1898-1907. Published by the Medical Review, 66 Finsbury Pavement, E. C.

Studies from the Rockefeller Institute for Medical Research.—Reprints, Vol. 8, 1908.

Yearbook of the United States Department of Agriculture. 1907. Published by the Government Printing Office, Washington.

When making digital pressure for the arrest of postpartum hemorrhage the aorta should be pressed directly against the spine with the ulnar side of the clenched hand. The pressure should be shifted over the area occupied by the aorta so as to avoid any damage to the sympathetic nerve plexus.

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(Black face indicates contributors of original articles; Roman capitals, original articles; and italics, editorial comments).

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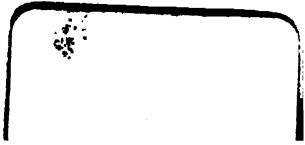
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